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THE POINT OF ELECTION AND MODES OF INVASION IN PULMONARY TUBERCULOSIS

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In this review of the modes of invasion in pulmonary tuberculosis, all minor avenues of entrance of the bacillus have been disregarded, and only inhalation and ingestive methods will be considered.

It is generally accepted by pathologists that the first stage of pulmonary tuberculosis is an involvement of the glandular and lymphatic structures of the lungs. Postmortem and roentgenographic evidence seems to prove that tuberculous foci are not established in lung tissue proper until after the peribronchial glands have been seriously damaged by the invading organisms. This is the so-called pretuberculous stage of the disease. In hundreds of reported necropsies, especially of children, foci in the peribronchial glands were the only demonstrable lesions in the body. This analogy has also been reported in comparative pathology, especially in cattle, which have been more carefully examined than other animals. In pseudotuberculosis of sheep and cattle, the pulmonary glands are first involved. Pulmonary pigmentation in man and animals shows first in the peribronchial glands. This view of the matter is strengthened further by the observation of human and veterinarian pathologists that if a focus is found in the lung tissue proper, this lesion is invariably accompanied by involvement of the pulmonary glands.

If the dosage is maintained, and other conditions are favorable, crippling of the peribronchial glands is followed by the arrest of a bacillus and the formation of a tubercle in lung tissue proper; and if this focus progresses to softening, it breaks through into the air vesicles, or into adjacent healthy tissue, where, in the latter case, bacilli that have been set free are again arrested by the highly complex system of lymph channels and glandular locks. In many cases, experts in roentgen diagnosis are now able to demonstrate involvement in the peribronchial glands, especially in children, long before the appearance of cough and sputum, thus furnishing the clinician ample grounds for the long entertained belief that cough and expectoration are secondary and late manifestations of pulmonary tuberculosis.

The problem, then, is to analyze the common anatomic methods, or routes, by which tubercle bacilli reach the point in lung tissue where they are arrested and colonized.

THE POSSIBILITY OF FOREIGN MATTER BEING INHALED DIRECTLY INTO THE AIR VESICLES

Minute particles of carbon, stone and such dust reach lung tissue, but the deposit of foreign matter in the interalveolar tissue or the lymphatic channels or the pulmonary glands does not prove that it was carried there in the ordinary process of respiration, as this function is commonly understood.

The general belief that anthracosis is due to the direct inhalation of dust is based largely on the fact that in miners and firemen, and certain stone cutters, the deposits of gritty matter can be demonstrated macroscopically as well as microscopically. This view of the question was seemingly upheld by Rindfleisch, who was able, in a series of necropsy studies of the lungs of charcoal workers, to demonstrate, and actually to classify, the carbonized wood deposits in the microscopic sections of the pulmonary tissues and in the peribronchial glands.

Nevertheless, if the histology of the respiratory mucous membrane is kept in mind, one cannot escape the conviction that the tidal air in its excursions up and down the trachea and bronchia would undoubtedly impinge foreign bodies somewhere on the long stretch of ciliated mucous membrane. One step further, by granting such a probability, establishes a profound doubt in one's mind whether dust or bacteria are ever actually driven directly into the air sacs in the ordinary act of breathing, or even by forcible inspiration.

And yet, pneumococci, influenza bacilli and other bacteria actually reach and grow in the air vesicles. The speculation that phagocytes might carry these organisms direct to the air sacs and plant them there has been offered as a solution of this perplexity, but it is a more reasonable explanation that these organisms, gaining a foothold on the bronchial mucous membrane, finally reach the air vesicles by an extension of the colony growth. Many writers believe that phagocytes pick up coal dust on the bronchial mucous membrane and carry it into the air sacs, and thence into the pulmonary lymph stream; but this seems improbable, if it is considered that even though the wandering cells do pick up dust and bacteria on the bronchial mucous membrane, these cells surely would be wafted along by the cilia, and finally driven out through the trachea, just as coal dust is driven out.

Many careful sections have been made of specimens from the lungs of miners accidentally killed while at work, and though the bronchia were markedly filled with coal dust, it was difficult for these investigators to demonstrate to their entire satisfaction any foreign matter in the air sacs themselves, notwithstanding the fact that the interlobular spaces and lymph channels were filled with carbon deposits.

However, there is a histologic peculiarity of the deeper portion of the respiratory mucous membrane that must not be overlooked in this connection. The minute, terminal branches of the bronchioles are not supplied with cilia, and if bacteria or dust got past the cilia and reached this deeper portion of the bronchia, undoubtedly the suction or pull of the adjacent lymph streams would draw them backward into the air sacs, and thence into open lymph vessels, in which they would drift until arrested in some glandular storehouse along that chain.

Piersol says:

> Between the air vesicles, minute openings or stomata exist; they usually connect with microscopic passages leading into the lymphatic channels. By means of these channels, particles of inhaled foreign matter, often deeply pigmented, are carried from the air sacs into the lymphatics, and become lodged within the interlobular connective tissues.

Cornet presented to the medical world a mass of experimental evidence in proof of the inhalation method of infection of the lungs. Fluegge demonstrated that fine droplets of sputum were driven to considerable distances by consumptives in the act of coughing or sneezing. Hoffman infected guinea-pigs

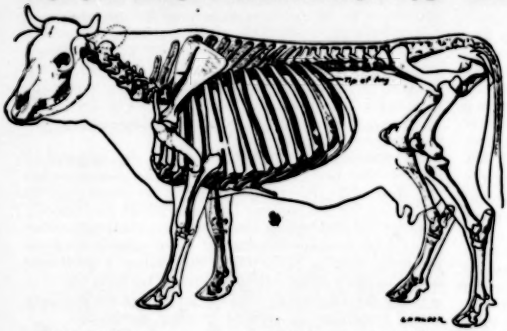

Fig. 1.—Skeleton of cow. Arrow points to location of tip of lung, which is the point of election in bovines. From Sissons.

by means of a spray of tuberculous sputum. Buchner and Enderlein succeeded in infecting small animals without the spray, merely by exposing them in the room to droplets of sprayed sputum. The ordinary inhalation method was used by Nocard, Rossignol and Kossel to infect calves, by Reichenbach to infect goats, and by Tappeiner to infect dogs.

Guerin and Grysez raised the issue that the possibility of swallowing had not been eliminated in these experiments, but the objection was immediately countered by Fluegge, Bartel and Neumann, using guinea-pigs, and by Titze and Weber, using calves, all of whom demonstrated that within a few minutes after exposure to infected dust, every portion of the lung showed the presence of tubercle bacilli, while the control exposure by feeding was much slower. Findel, working with guinea-pigs, used graduated dosage in the two methods, and found that it required only a fractional dose to infect by inhalation; while in the control animals, it required a hundred times greater dosage to infect by ingestion. Titze and Weber, working with calves, demonstrated that the average dose required to infect the animal by inhalation was 0.01 mg., while it required 10 mg. of the same culture to infect by feeding.

Not satisfied with these experiments, which were still open to objection, Findel opened the trachea of dogs and calves and produced pulmonary infection by direct inhalation of tubercle bacilli. This particular experiment has been confirmed by a number of investigators. Similar inhalation experiments with the *Bacillus prodigiosus* were made by Hartman and Hartl, with mold fungi by Hilderbrand and Ballin, and with India ink by Kuss, for the purpose of demonstrating that these organisms and the ink could enter the lung tissue as foreign bodies by way of the respiratory mucous membrane.

Arnold and Penfick went a step further by attempting to produce experimental anthracosis by means of inhalation, but Grysez and others could not confirm Arnold's and Penfick's work, and they concluded that anthracosis was a condition that was induced by swallowing dust, the carbon reaching the lungs by way of the intestinal tract.

Finally, because of the constant involvement of the apex as the primary focus of infection in human tuberculosis, Grober's claim that the mode of infection was commonly through the tonsil, and thence to the parietal pleura opposite the dome of the apex, misled pathologists for a time, until attention was called to the fact that the lymphatics of the tonsil empty into the deep cervical chain, and they in turn, together with the chain from the parietal pleura opposite the apex, empty into the great veins, in the angle of the neck, making it highly improbable that such a backward infection is possible. Latham's assertion that there may be, and probably is, a backward invasion of the lymphatics by the tubercle bacillus, also has never been confirmed by necropsy studies, and lacks the pathologic analogy in syphilis or anthracosis, both of which progress in the course of the lymph stream.

THE POSSIBILITY OF FOREIGN MATTER REACHING THE LUNGS THROUGH THE INTESTINAL TRACT

Several reliable investigators have demonstrated by animal experimentation that the continuous introduction of lampblack into the intestinal tract, over a long period of time, will produce well marked anthracosis. Weigert had demonstrated previously that the younger the animal the more readily did foreign matter pass the barriers of the lymph nodes. In old cows, pigmentation of the lungs, and bronchial and mediastinal glands, exactly corresponds to the anatomic fields invaded by the tubercle bacillus. Guerin and Grysez, working with Calmette, failed in numerous experiments to produce anthracosis in animals exposed to a constantly saturated atmosphere of lampblack if the esophagus was closed; but anthracosis invariably followed if the lampblack was introduced into the stomach by means of a tube, or if mixed with the food.

The same investigators proved by repeated animal experimentation that tubercle bacilli, introduced into the stomach by means of the esophageal tube, penetrated the intestinal mucosa without demonstrable lesions, the organisms being recovered at varying periods in the lungs and mediastinal glands. Nicolas and Descas fed tubercle bacilli to fasting dogs, and recovered the organisms in the chyle duct as early as

three hours after ingestion. Ravenel and Klebs immediately paralleled this experiment by introducing into the stomach of dogs, by means of the esophageal tube, tubercle bacilli suspended in a mixture of melted butter and warm water, the organisms being recovered from the chyle ducts and mesenteric glands in less than three hours in some of the experiments.

Behring has shown that even the anthrax bacillus will penetrate the intestinal mucosa in a few hours.

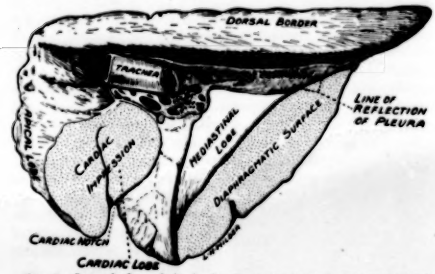

Fig. 2.—Lateral view of the bovine lung, the shaded portion of the tip showing the point of election. The bovine apical lobe also is frequently involved, but infection of the cardiac lobe, the most dependent portion of the bovine lung, rarely occurs, even in the last stages of the disease. From Sissons.

Schlossmann and Engel injected tubercle bacilli, suspended in cream, into the stomachs of guinea-pigs, and after six hours the animals were killed, and portions of lung tissue inoculated into other guinea-pigs, with positive results.

This experiment was also repeated by Ravenel, in a most careful manner, with positive findings. He opened the abdomens of guinea-pigs, and with a very thorough technic, introduced bacilli into the stomachs of the pigs by means of sterile needles, which were coated with paraffin, the intention being to avoid planting bacilli in the stomach wall while introducing the needle. The animals were killed at intervals of four and six hours, and portions of lung tissue injected into control guinea-pigs, with positive results. In another series, the animals were killed and examined at the end of six weeks. Nine out of ten had tuberculous foci in the lungs, besides more or less involvement of the thoracic and mesenteric glands.

Oberworth and Rabinowitch went a step farther in avoiding possible error in a similar series of experiments, and succeeded in producing positive primary lung involvement, by feeding tubercle bacilli to young guinea-pigs through established gastric fistulas.

THE MODE OF INVASION IN HUMAN AND BOVINE TUBERCULOSIS

In analyzing the possible methods of infection of man with the tubercle bacillus, one is justified in basing fairly definite conclusions on experimental data that have been subjected to comparative pathologic analogies. Therefore, it is reasonable to assume that in whatever way the cow is infected it will be found that anatomically, the manner is not dissimilar in man; but at the very outset believers in the ingestion method, especially those who are wedded to the theory that milk is the prime factor in the spread of tuberculosis, are confronted with the confusing fact that the cow herself is not a milk feeder, notwithstanding her marked susceptibility to tuberculosis.

If one stops short here, and throws out of consideration the ingestion method of infection in bovines, then likewise one should exclude this method in the study of human tuberculosis; but the experimental data quoted above do not justify any such action.

As early as 1868, Chauveau produced pulmonary and general tuberculosis in young calves by feeding them ground material of diseased organs of tuberculous cows. Swine tuberculosis is undoubtedly by ingestion — nearly always by tuberculous milk. Experimentally, calves have been infected in this manner when the surroundings were otherwise controlled to prevent the possibility of contracting the disease by inhalation. Avian tuberculosis is by ingestion, without question.

The cow's infection is also by ingestion, notwithstanding the fact that she is not a milk feeder. A study of the habits of this animal is convincing that an infected cow spreads the contagion by explosive coughing, thus sending droplets of sputum in all directions, on her own food and on the food of her adjoining neighbors. Ravenel has proved that the cow does cough, and that she does throw off sputum in this manner.

Friedberger and Fröhner, long ago, called attention to the fact that when a tuberculous cow is placed in a stable, the disease progresses along a row, passing from one to another in regular order. Adams and Jobson made the interesting observation, on two different herds in which the cows were stalled in pairs, solid partitions as high as the animals' backs separating each pair from other pairs, that the tuberculous cow of the pair invariably infected her mate, but the cows in the adjoining stalls, if healthy, remained so.

Of course, this evidence in and of itself alone does not rule out the possibility of infection by inhalation; and yet, if viewed in the light of the methods by which swine and fowls contract the disease, it certainly deserves careful consideration.

Fig. 3.—Superior surface of bovine lung, shaded portions marked *x* showing point of election. From Theobald Smith.

There seems to be good ground for the stand taken by Aufrecht that tubercle bacilli gain the circulation, however introduced, and then traverse the blood vessels as foreign bodies until arrested, or until screened out in some organ, most commonly in the pulmonary terminal arteries. Here the bacillus passes the thin vessel wall barrier, to be picked up by lymphocytes, probably, and promptly carried to the nearest lymph node. That is the histologic picture of invasion in man and in animals. The pathologic picture does not come into view until a bacillus is arrested.

THE POINT OF ELECTION

Pathologists are now convinced that the tubercle bacillus, however introduced into the body, gains

entrance to the circulation in man and in animals without demonstrable lesion. The final point of lodgment of the organism affords a wide field for theorizing, much of the vast literature on the subject of the initial site of pulmonary tuberculosis in man being wholly speculative, and often illogical, especially when subjected to the analogies of comparative pathology. It seems only fair to assume that whatever biologic or anatomic factor is advanced as the reason for primary involvement of the apexes in man, the same causes must apply in like manner to the initial site in the bovine.

The hypotheses that the two different bronchial angles subject one apex to greater exposure to infection on a particular side; the recent resurrection of Freund's theory to damage done to the apex by shortening of the first costal cartilage, followed by shortening of the first rib by ossification; the supposed unstableness of the apexes in mammalian life; vocational postural effects on the upper lobe; reversal of the respiratory rhythm; atelectatic zones, and many other similar assertions, fall to the ground in attempting to account for the point of election in bovine tuberculosis. If any of these fanciful theories appeal to the imagination, then it seems fair to insist that whatever causative factor is used to explain apical involvement in man, the same logic, under like conditions, should be applied to elucidate the point of election in the lungs of cattle.

Fig. 4.—Thoracic duct, and the deep cervical lymphatics that anastomose with the parietal pleura opposite the apexes of the human lungs. By Mascagni. From Cunco.

Pigmentation of the lungs in man, and in cattle, corresponds precisely to the fields of invasion of the tubercle bacillus. In man the apexes are the initial sites of demonstrable tuberculous foci. This is also true in anthracosis. In the cow, however, the initial lesion is at the very tip of the caudal lobe, the most superior portion of the bovine lung, anatomically corresponding to the most dependent portion of the human lung (Figs. 1, 2 and 3). This portion of the cow's lung is the most expansible, and has the best lymphatic drainage. None of the quoted hypotheses offers a reasonable explanation why this portion of the cow's lung is the point of election. The reason must be purely anatomic, for if bacilli first gain the blood stream through the lymph channels, then the pulmonary circulation must of necessity distribute them uniformly to all portions of the lungs, in cattle, as well as in man.

To emphasize a point, it is restated that in cattle, as well as in man, the deposits of foreign matter are anatomically the same as for tubercle bacilli. The lungs of old cows show the greatest pigmentation in the superior portion of the tip of the caudal lobes, which is shown in Figure 3. The shaded portions in the caudal lobes, maked *x*, are the points of election in bovine tuberculosis.

It has been repeatedly demonstrated that the very tip of the caudal lobe of the cow's lung is more generously supplied with lymphatics than any other portion of the lung. These vessels converge at the root of the lungs and empty into the peribronchial glands. Lying contiguous to, and just above the tip of the caudal lobe, is the large posterior mediastinal gland, which picks up the lymphatic plexus on the thoracic surface of the diaphragm, and those from the pericardium and lower portion of the esophagus. The esophagus, thoracic aorta, inferior vena cava and thoracic duct lie immediately above this gland. Exactly beneath the gland, as shown in Figure 2, and separating it from the lung tissue, are the parietal and visceral layers of the pleura, which enclose the pleural lake.

How this gland is infected, and why it shows such constant pigmentation, is the first and foremost problem to solve. In one series of fifty-three careful necropsies of tuberculous cows, Theobald Smith demonstrated that this gland was always involved when there was a focus in the caudal lobe, and in several instances the gland showed old, calcareous lesions, while the tip of the nearby caudal lobe, lying across the pleural lake, was probably invaded at a more recent date. Out of a series of over 40,000 necropsy studies of bovine tuberculosis in the Budapest abattoir, it was demonstrated that the infection in over one third of the cases was confined to the peribronchial and posterior mediastinal glands, a large percentage—figures not stated—of this number showing that the posterior mediastinal gland alone was involved. In one particularly interesting case, Mohler, of the United States Bureau of Animal Industry, demonstrated tuberculous foci in this gland in a five months' bovine fetus, with no other lesions in the carcass. In pseudotuberculosis, or caseous lymphadenitis of sheep, which certainly is not an inhalation disease, the same topographic involvement of the sheep's lung and posterior mediastinal glands takes place, just as with foreign matter and tubercle bacilli.

If one keeps the anatomy of this region of the thorax clearly in mind, especially the relations of the two pleural surfaces, it seems a reasonable belief that bacilli and pigmented foreign matter must cross the

pleural lake, either from the lung side, upward to the gland, or from the gland, downward to the lung. The problem is confusing from either view, especially if the attempt is made to prove that the gland is first invaded, and the lung secondarily infected.

The reasonable conclusion is that bacilli and foreign matter are arrested in that portion of the lung shown in the shaded portion in Figure 3. At that point of the lung there must be an area of lymph stasis induced by the suction of the large posterior mediastinal gland, which, by means of a network of lymph vessels, drains that portion of the parietal pleura lying exactly opposite.

It seems fair to presume that the gland either receives its infection from the immediate underlying lung tissue, or that this portion of lung tissue receives its infection from the posterior mediastinal gland lying just above. In either event the pathologist is confronted with the fact that if bacilli are first screened out of the circulation at this point, or first penetrate the air vesicles, bacilli, and foreign matter as well, must pass through two layers of pleura to reach the gland; or if they are first screened out in the gland they must pass to the underlying lung tissue by the same route.

That there are counter currents in the two pleural layers at this portion of the cow's lung is undeniable, and these counter currents, if they possessed any appreciable force, would most assuredly create a lymph stasis at a delimiting area somewhere between the points of suction. The mechanics of this assumed lymph stasis is not hard to understand if the anatomy of the great thoracic duct is held clearly in view (Fig. 4). This duct, as large as a good sized vein, is generously supplied with check valves throughout its course, to prevent a backward flow of chyle and lymph. Opposite the fifth dorsal vertebra, in the bovine, it receives a large lymphatic vessel from the enormous posterior mediastinal gland. The circulation in the thoracic duct is maintained almost wholly by means of the suction caused by the venous flow past the orifice of the duct at its opening into the subclavian vein (Fig. 5). The pull in the trunk of the duct would certainly influence the flow of lymph from the posterior mediastinal gland, and this in turn would drain the pleural lake in that area, and the visceral layer of the pleura, beyond. Then if the peribronchial glands have been previously damaged by invading organisms or by deposits of coal dust, accidental microscopic foreign matter falling within this exact zone of lymph stasis would most likely be temporarily arrested, with the subsequent formation of a focus of infection in the case of the tubercle bacillus.

If bacilli first reach the circulation, as most pathologists now believe, then there is no good reason to doubt that all portions of the human and bovine lung are exposed to an equal degree of infection or dosage, whether they enter the circulation by way of the alimentary tract, or are inhaled directly to the air sacs and then penetrate to the underlying interalveolar tissue. Tubercle bacilli have no selective power for any particular portion of lung tissue. Once they are arrested and gain a foothold, they will grow as rapidly in one portion of the lung as in another.

The lodgment, then, of bacilli and foreign matter by apparent selection in a special organ, and in the superior part of this organ, as is the case in both the cow and man, contrary to the clinical observation that pneumonia always attacks the lower lobe, and contrary to the laws governing ponderable matter, must be due to mechanical causes influencing them along unusual lines. In man, that portion of the parietal pleura lying contiguous to the apex of the lung is drained by a vast network of lymph vessels that empty into the deep cervical chain (Fig. 4). Nowhere else in the human thorax is there a decided counter lymph current; and granting that there is this counter current, it could account for an area of lymph stasis in the apex of the lung.

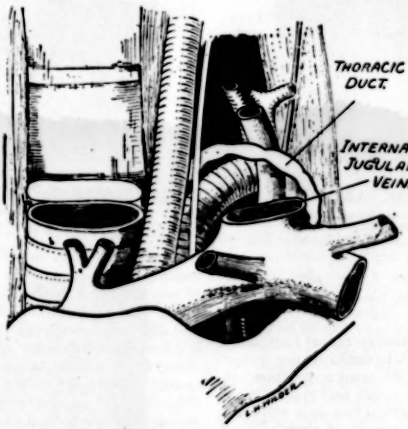

Fig. 5.—Terminal bend of the thoracic duct. From Cuneo.

Study of the pulmonary lymphatic distribution in man shows that the apex, apparently, is not well protected by its separate set of small peribronchial glands. Reasoning from this fact alone, one is liable to jump to the conclusion that this seeming lack of glandular defense might account for the greater frequency of apical infection. Comparative pathology saves one from this error, however, as the point of election in the cow's lung has the greatest defensive lymphatic barrier. Carrying the analogy still further, it is the most plentifully supplied with lymphatics, and if posture has any bearing on the question, the caudal lobe, by its superior position in the thorax, has the best bronchial drainage. In fact, in taking any view of the method, or methods of infection in man, every anatomic or biologic argument that has been cited must apply with equal force in explaining the method of bovine infection.

CONCLUSIONS

Pulmonary tuberculosis, in man as well as in animals, is primarily an infection of the lymphatic vessels and lymph glands in the lungs.

Cough and expectoration are late manifestations of the disease.

With the experimental evidence at hand, it is a fair assumption that, commonly, infection in man and animals is by the ingestion method.

Even where the bacillus is planted on the respiratory mucous membranes by means of dried sputum, or by dried feces, as is often the case with cattle, the anatomic method is still by the intestinal tract, for the reason that the number of bacilli that would be swal-

lowed under such conditions is out of all proportion to the very doubtful number that might possibly reach the air vesicles by inhalation.

The granting that infections are commonly by the intestinal tract does not lessen at all the potential danger of infected dust, as much of this dust would be swallowed, even though planted on respiratory mucous membranes by inhalation.

All portions of the lungs, in man and in animals, are invaded with dust and tubercle bacilli in equal measure, whether the route be through the trachea or through the intestinal tract.

The lower, as well as the upper, peribronchial glands are equally pigmented in anthracosis, and roentgenograms show the same involvement in early tuberculosis. Pigmentation and infection of the lower lobes in man do not appear until the defenses of the peribronchial glands are permanently damaged.

No portion of the lung possesses a specific biochemical constituent that would sensitize it to the tubercle bacillus, nor does the bacillus possess selective properties for any special portion of the lung.

Whatever exact reason exists for the constant invasion of a specific area in the lungs of man and cattle, the causes for this point of election must be wholly physio-anatomic.

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SODIUM AND POTASSIUM IODIDS IN ROENTGENOGRAPHY

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A few weeks ago, in a preliminary report,[1] attention was called to some experimental results in the use of potassium and sodium iodids as opaque mediums in roentgenography. Since this report was made, these solutions have been put to practical use in a sufficient number of cases to warrant a report of their clinical application.

PREPARATION OF SOLUTIONS

For pyelography, a 25 per cent. aqueous solution of sodium or potassium iodid is used. Thus, 100 gm. of solution is made by dissolving 25 gm. of the salt in 75 c.c. of water. For cystograms, a 15 per cent. solution gives sufficient density. As was noted in the previous article, these solutions are stable, neutral in reaction, and cause no precipitation in urine or bloody urine. On standing, they become slightly yellow, but this causes no trouble. There are no special precautions to be observed in preparing the solutions, and they are easily sterilized by boiling.

CLINICAL RESULTS

These solutions have been used by us or in our presence in eight human cases, which have included the examination of two bladders, three kidneys and three chronic sinuses. In all cases the roentgenograms have been entirely satisfactory. The pyelograms were made with solutions varying from 25 to 33 per cent. in strength, the potassium and sodium salts being used interchangeably. A 25 per cent. solution of the sodium salt casts a shadow sufficiently dense for all purposes, though a denser solution may be safely used if greater contrast is desired. For cystograms, a 15 to 20 per cent. solution of either salt is used.

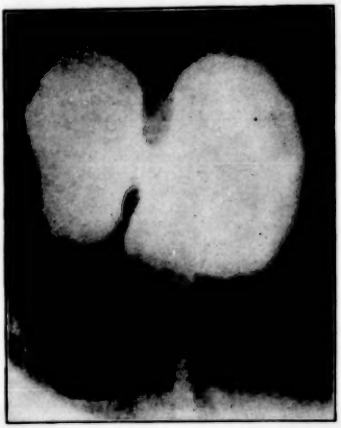

Fig. 1.—Cystogram of bladder filled with 15 per cent. solution of sodium iodid; patient of Dr. Bransford Lewis. In addition to the large diverticulum, the prostatic cavity is shown. The prostate gland had been removed elsewhere some time before. (Courtesy of Drs. Bransford Lewis and Neil S. Moore.)

As regards pain or discomfort to the patients, in making the two cystograms, there was no complaint of any kind in either case. In making the pyelograms, there was complaint of some pain over the bladder and along the course of the ureters, but no more than is often seen following ureteral catheterization alone. Since the solutions when introduced into the bladder caused no unusual sensation of any nature, it is probable that the discomfort in filling the kidney pelvis was due to mechanical causes and not to the character of the solutions. The patients walked to their homes after the pyelograms were made, and complained of no further trouble. One voided a small quantity of blood-tinged urine after the ureteral catheters were withdrawn; after this, and in the other cases, the urine voided was unchanged in character. The large bladder diverticulum, shown in Figure 1, was removed by Dr. Lewis four days after the cystogram was made. At operation the bladder showed no sign of any irritation due to the solution used.

In view of this experience, though rather limited in quantity, we feel reasonably safe in recommending these solutions for this kind of work.

After one of us had been ordered to duty in St. Louis, we were fortunate in having Drs. Bransford Lewis, J. R. Caulk and H. G. Greditzer volunteer to use the solution. We acknowledge their kindness in allowing us to use the accompanying illustrations.

CHOICE OF SOLUTIONS FOR PYELOGRAPHY

Colloidal silver solutions are quite satisfactory for this work. These solutions, however, are relatively expensive, and in addition possess undesirable physical properties. In the past three years the thorium solu-

1. Cameron, D. F.: Aqueous Solutions of Potassium and Sodium Iodids as Opaque Mediums in Roentgenography: Preliminary Report, The Journal A. M. A., March 16, 1918, p. 754.

tion introduced by Burns[2] has become very popular. Its cost is much less than that of colloidal silver of equal density, it is a clear solution, it does not stain, and it has a relatively low viscosity. A little more than ordinary care is necessary to prepare the solution, it being necessary to neutralize the aqueous solution of thorium nitrate, which is acid in reaction, and to add sufficient amount of sodium citrate to keep the thorium from precipitating. Though this is not at all a difficult procedure, most users have preferred to buy the prepared solution which, as sold at present, affords the makers a considerable profit. At present thorium salts are rather difficult to obtain and are not listed by several large wholesale chemical firms which formerly kept them. At the present retail price of sodium and potassium iodids, a 25 per cent. solution of these salts is about half as expensive as the prepared 15 per cent. thorium solution. The sodium salt is a little more expensive than the potassium, and in the same concentration gives a slightly denser shadow for the reason that its relative iodin content is higher. These iodid solutions have all the desirable features of the thorium preparation, and in addition are made with much less trouble, are less expensive, and the ingredients are obtainable at any drug store. In the event of absorption in ordinary amounts, these salts are known to be nontoxic.

The prevailing retail price of a pint of the silver, thorium and iodid solutions of the same density is about $10, $5 and $2.50, respectively. The wholesale price is approximately 25 per cent. less.

THEORETICAL CONSIDERATIONS

It is obvious that a sufficiently concentrated solution of any iodid or element of high atomic weight will be opaque to the roentgen ray. For use in pyelography, however, these solutions must be nonirritating and

Fig. 2.—Pyelogram of woman patient with floating right kidney. The kidney pelvis was partly filled with a 25 per cent. sodium iodid solution. The malposition of the kidney prevented a better technical result. (Courtesy of Dr. H. G. Greditzer.)

nontoxic, and must not form precipitates with urine or bloody urine. These restrictions limit the field considerably. From a more or less systematic survey of the common chemical substances that might be used, the iodid solutions recommended seem to be most suitable. On general principles it would seem better to have solutions of lower osmotic pressure. Aside from using colloidal solutions, this result could be obtained by using salts whose molecules in solution contain

Fig. 3.—Pyelogram of right kidney of a man. A 33 per cent. potassium iodid solution was used. (Courtesy of Dr. H. G. Greditzer.)

several atoms of high atomic weight which are not ionized to a high degree. Thorium iodid came to mind as a possibility. This could not be obtained on the market, and in any event its scarcity and expense would rule it out. Strontium iodid has several properties to recommend it. It is easily obtained, is nontoxic, and is not very expensive. It forms a neutral solution in water, and a 20 per cent. solution casts a good shadow under the roentgen ray. The one objection to its use is that when mixed with urine a very light, flocculent but appreciable precipitate occurs, requiring some time, however, to form and settle. Though this is not so serious, it should be a bar to its use in cavities which cannot be well irrigated. Other iodid and heavy metal solutions were tried, but none were found which are so free from objections as the two recommended.

SUMMARY

1. Excellent pyelograms have been obtained through the use of from 25 to 33 per cent. aqueous solutions of sodium or potassium iodids as opaque mediums. A 25 per cent. solution of the sodium salt is recommended for this work, though if greater contrast is desired, a stronger solution may be used. A 15 to 20 per cent. solution is sufficient for good cystograms.

2. These solutions have been used, either by us or in our presence, on eight patients. No undesirable effects of any nature have been noted.

3. The solutions are made by dissolving the proper amount of the salt in water. The solution thus formed is neutral in reaction, quite saline in taste, but nontoxic and nonirritating to the bladder or kidney pelvis, and causes no precipitation when mixed with urine or blood-tinged urine. Of all solutions used in pyelography, we are familiar with none so easily made and so inexpensive.

2. Burns, J. E.: Thorium. A New Agent in Pyelography, Bull. Johns Hopkins Hosp., 1916, 27, 137.

A CASE OF DOUBLE SPONTANEOUS PNEUMOTHORAX *

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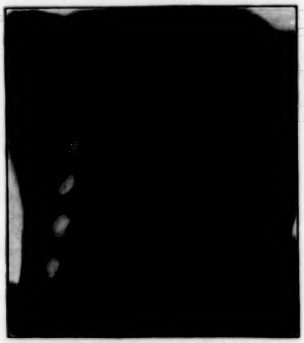
Spontaneous or natural pneumothorax is not an infrequent complication in pulmonary tuberculosis. Double spontaneous pneumothorax, however, is exceedingly rare. In a review of the indexed literature I was unable to find a single case report on record.

REPORT OF CASE

I. S., a man, aged 50 (Case 2714), a merchant, admitted, Jan. 2, 1917, presented a negative family history, aside from the fact that the father died of probable pulmonary tuberculosis. The patient had measles during childhood, but had made a good recovery with no complications. No other illness was noted until the onset of pulmonary tuberculosis about 1905. The type of onset was insidious, with anorexia, loss of weight, cough, expectoration, and night sweats. The patient later developed pain in the right axilla, and occasional streaked sputum. The sputum was found positive at that time. Since the onset in 1905, the patient had been



Right side: Complete collapse with fluid to fourth rib. Pneumothorax of longer standing. Left side: Acute type of pneumothorax, partial in extent.

subject to frequent colds and to attacks of sore throat. He wandered over a considerable portion of the United States in search of health, and eventually came to Denver, Jan. 2, 1917, to be admitted to the Sanatorium of the Jewish Consumptives' Relief Society.

On admission the symptoms were severe cough (worse at night and on lying down), expectoration, occasional chills, temperature rising to 100 F. in the afternoon, with a pulse range of from 80 to 104. There were no night sweats, weakness was marked, and there were occasional blood streaks in the sputum, which was positive for tubercle bacilli. Dyspnea was marked on the least exertion. There was rather severe pain over the right side, which had been present, off and on, during the past twelve years. The appetite was good and the bowels were regular.

The patient was markedly emaciated, and looked more than 60 years of age. He was somewhat cyanotic, with marked depressions above and below the clavicle, in both suprascapular and infrascapular spaces, and in the intercostal spaces. The secondary muscles of respiration were markedly developed, the costal angle was acute, the glands were not palpable, the skin was dry and somewhat scaly, the hair was sparse and dry, the eyes, nose, throat and ears were normal, there were no pulsations in the neck, and the thyroid gland was not enlarged.

The heart was to the right, the right border being at the right nipple line. The left border was under the sternum. The sounds were normal, the radial arteries were palpable, the superficial veins on the extremities were dilated, and the venous flow was sluggish. The systolic blood pressure was 94, and the diastolic, 64. The abdomen was negative. The liver, spleen and kidneys were not palpable. The urine was normal. There was a marked tenderness over both posttibials, the reflexes and the bones and joints were normal, and the muscles were atrophied throughout. The chest examination revealed infiltration to cavity formation throughout both lungs. There was a tendency to hyperresonance over both lungs which we thought was due to associated emphysema. No signs of fluid and no splash were present.

The patient left the institution, Feb. 12, 1917, after a disagreement with a fellow patient, and went to live at a farmhouse a few blocks distant from the sanatorium. A few days later we heard that he was very ill and had a great deal of pain on the right side. He was up and about in a few days. March 4, Dr. Joseph W. Craighead saw him and, although the patient was so sick and in such severe pain that an examination could not be properly made, he made a diagnosis of spontaneous pneumothorax, from the symptoms observed. A few hours later when admitted to the sanatorium the patient was moribund, and twenty minutes later he died.

To verify our diagnosis, a necropsy being unobtainable, we examined the body by fluoroscopy and discovered a right-sided pneumothorax with fluid. This being of sufficient interest, we made a roentgenogram of it. On developing the plate we were much surprised to find what looked like an acute pneumothorax on the left side.

We concluded that the patient developed the pneumothorax on the right side soon after leaving the sanatorium, and that the pneumothorax on the left side developed, March 4, and diminished his breathing space sufficiently to produce death.

* From the Sanatorium of the Jewish Consumptives' Relief Society.

ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF PULMONARY TUBERCULOSIS

RESULTS IN PRIVATE AND DISPENSARY PRACTICE

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The basis of this report is a record of thirty-two cases of pulmonary tuberculosis treated by an artificial pneumothorax of nitrogen gas during a period of three and one-half years. It has been claimed that a sanatorium regimen is an essential element in the management of patients treated by pulmonary compression. Our results in this series will, I hope, disprove the necessity, although I fully admit the advantages of sanatorium treatment, and cause us to realize that a great deal can be done for the many patients at home, unable or unwilling to seek the western sanatoriums for relief.

These cases were taken chiefly from the material afforded by the Houston Anti-Tuberculosis League Clinic, and the patients were in many instances unable to procure the rest and nourishment prescribed for them. Nineteen men and thirteen women were treated for an average period of six months each; three patients were treated for eighteen months each; four for one month each, and the other patients for varying periods between. The patients were classified as seven, or 22 per cent., in the first stage; fourteen, or

44 per cent., in the second stage, and eleven, or 34 per cent., in the third stage. Their ages varied from 15 to 60 years. Our first seven cases were selected chiefly because they were seemingly hopeless. But later we began to discriminate more closely as we came to realize that in this procedure we had an exceedingly effective measure for assisting these unfortunates in arresting their disease.

A Floyd-Robinson apparatus was used, and the operation was performed under procain (novocain) and epinephrin anesthesia. The physical examination was, in most cases, supplemented by a careful roentgen-ray examination. An effort was made to secure unilaterally involved cases, or patients with slight involvement of the untreated lung. The degree of activity of the untreated lung is of more consequence than the amount of lung tissue involved per se. This is because a relatively larger area of nearly quiescent tuberculous lung tissue will bear the strain of having to act vicariously for the collapsed lung better than a smaller area of actively diseased tissue. As will be seen in the case reports, this ideal was not possible because we had to accept the material available for treatment. Twelve of the patients had involvement of the untreated lung, which was of a more or less inactive type. An area without cavities and râles in the untreated side, even involving the greater portion of a lobe, will offer a better prognosis than a small, active focus in that lobe. It is unwise to treat any case, except palliatively, which presents a tuberculous focus in the untreated basal lobe. The opposite lung, acting vicariously for its compressed mate, and therefore subjected to greater expansible effort, will more readily activate a focus in the base where the expansile mobility is greatest. All the eleven rather extensively involved bilateral cases presented signs of cavity in the treated lung; while in the opposite, that is, the better lung, none of the cases had any sign of cavation.

The technic is comparatively simple, and the operation safe, if the indications are rigidly followed. It is self evident that, for the successful performance of the operation, pleural adhesions should be at least limited in extent, and preferably nonexistent. In 15 2/7 per cent. of our cases, we encountered troublesome adhesions which prevented us from carrying out the treatment. The use of the fluoroscope is of the greatest value in this particular, although it is possible in a majority of the cases to determine the presence of adhesions by the usual methods of physical examination. With a well marked Litten's sign and fair basal excursion, and the absence of marked chest retraction, it is reasonable to assume that troublesome adhesions are absent. The choice of the site of puncture is usually at the fourth or fifth interspace in the anterior axillary line, or at the angle of the scapula. It is well to percuss lightly the area to be elected, and unless a fair quality of resonance is present, adhesions are liable to lie beneath, and another site should be chosen.

SUMMARY OF THIRTY-TWO CASES

Case	Occupation	Sex*	Age	Race†	Duration of Disease	Duration of Treatment	Involvement: Unilateral	Involvement: Bilateral	Stage: First	Stage: Second	Stage: Third	Result During Treatment: Adhesions	Result During Treatment: Improved	Result During Treatment: Unimproved	Present Condition: Improved	Present Condition: Unimproved	Present Condition: Arrested	Present Condition: Dead	Present Condition: Unknown	State
1. W. E. N.	Carpenter	♂	47	H. S. White	1 yr.	6 mo.	..	+	..	..	+	..	+	..	..	..	..	+	..	Married
2. J. A. D.	Telegrapher	♂	31	H. S. White	1 yr.	1½ mo.	..	+	..	..	+	..	+	..	..	..	..	+	..	Married
3. J. R. K.	Dentist	♂	30	H. S. White	1½ yr.	6 mo.	..	+	..	..	+	..	+	..	..	..	+	..	..	Single
4. E. J.	Farmer	♂	38	H. S. White	6 mo.	1 mo.	..	+	..	..	+	..	+	..	..	..	..	+	..	Married
5. H. W.	Tailor	♂	22	H. S. Colored	1 yr.	1 mo.	..	+	..	+	..	+	..	..	..	..	+	..	..	Married
6. H.	Farmer	♂	46	H. S. White	3 yr.	0	..	+	..	+	..	+	..	..	..	..	..	..	+	Single
7. F. S.	Housewife	♀	48	H. S. White	3 yr.	6 mo.	..	+	..	..	+	..	+	..	..	+	..	..	..	Married
8. G. F. W.	Farmer	♂	61	H. S. White	5 yr.	6 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Married
9. G. P.	School girl	♀	15	H. S. White	6 mo.	18 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Single
10. L. L.	Farmer	♂	24	Italian	6 mo.	2 mo.	..	+	..	..	+	..	+	..	..	..	..	+	..	Single
11. P. L.	Farmer	♂	24	Italian	2 mo.	2 mo.	..	+	..	+	..	..	+	..	..	..	..	+	..	Single
12. M. B.	Housewife	♀	35	White H. S.	1 yr.	0	..	+	..	..	+	+	..	..	..	..	..	+	..	Married
13. R. F.	Solicitor	♂	38	White H. S.	1 mo.	2 da.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
14. T. S. H.	Clerk	♂	30	White H. S.	1 yr.	18 mo.	..	+	..	..	+	+	..	..	..	..	+	..	..	Married
15. J. B.	Elevat'r boy	♂	19	White H. S.	1 yr.	0	..	+	..	..	+	+	..	..	..	+	..	..	..	Single
16. C. W. B.	Clerk	♂	21	White H. S.	7 mo.	18 mo.	..	+	..	..	+	..	+	..	+	..	..	..	..	Married
17. R. E. L.	Clerk	♂	31	White H. S.	6 mo.	0	..	+	..	..	+	+	..	..	..	..	+	..	..	Married
18. W.	Housewife	♀	39	White H. S.	6 mo.	0	..	+	..	+	..	+	..	..	..	..	+	..	..	Married
19. A.	Shoemaker	♂	43	Jewish	3 yr.	2 wk.	+	..	..	+	..	..	+	..	..	..	+	..	..	Single
20. C. W. S.	Foreman	♂	50	White H. S.	10 yr.	7 mo.	..	+	..	..	+	..	+	..	..	+	..	..	..	Married
21. L. A. H.	Housewife	♀	29	White H. S.	2 mo.	1 yr.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
22. A. F. B.	Housewife	♀	32	White H. S.	3 yr.	1 yr.	+	..	..	+	..	..	+	..	..	..	+	..	..	Married
23. R. H.	Brakeman	♂	30	White H. S.	5 mo.	14 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Single
24. F. W. G.	Housewife	♀	40	White H. S.	5 yr.	6 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Married
25. J. J. T.	Housewife	♀	40	White H. S.	3 mo.	6 mo.	+	..	..	+	..	..	+	..	..	..	+	..	..	Married
26. S. L.	Clerk	♂	28	White H. S.	1 yr.	2 mo.	..	+	..	+	..	..	+	..	+	..	..	..	..	Single
27. M. A.	Housewife	♀	32	White H. S.	5 yr.	8 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Married
28. E. M. H.	Housewife	♀	26	White H. S.	1 yr.	8 mo.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
29. F. S.	School girl	♀	17	White H. S.	10 mo.	4 mo.	..	+	..	..	+	..	+	..	+	..	..	..	..	Single
30. C. F. S.	Housewife	♀	33	White H. S.	2 mo.	9 mo.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
31. M. H.	Sailor	♂	27	White H. S.	2 mo.	6 mo.	+	..	+	..	..	..	+	..	..	..	+	..	..	Single
32. V.	Housewife	♀	22	White H. S.	1 yr.	6 mo.	+	..	+	..	..	..	+	..	+	..	..	..	..	Married

* In this column, ♂ denotes male, and ♀ female.
† In this column, H. S. means American nativity.

I shall not attempt to describe every case in detail, but shall give a summary of the histories of six cases, classifying them as follows:

1. Hopeless, bilaterally involved, advanced tuberculosis (Case 1).
2. Chronic, bilaterally involved, fibroid tuberculosis (Case 2).
3. Acute pneumonic tuberculosis (Case 3).
4. Pulmonary hemorrhage (Case 4).
5. First-stage tuberculosis (Case 5).
6. Chronic tuberculosis, with a large cavity in the compressed lung, and moderate involvement in the better lung (Case 6).

REPORT OF CASES

Case 1.—W. E. N., aged 47, an American carpenter, married, had suffered from the disease one year before the first examination. The disease was extensively bilateral, most marked in the right lung with signs of cavity in the right upper lobe. As a third-stage case, it was hopeless. The patient was bedridden, expectoration was profuse, and there were night sweats, dyspnea and high temperature. Artificial pneumothorax on the right side was begun, June 3, 1914. The temperature dropped to 99 F. in the afternoon, and for four months was never above 99.2. The patient improved wonderfully. The sputum decreased, the night sweats stopped, the appetite improved, and the patient gained in weight and strength until he could get out of bed at will. In November, a right-sided pleural effusion appeared which partially compressed the lung until the patient's death in March, 1915.

Case 2.—F. S., a widow, aged 48, an American, referred by Dr. C. C. Green, gave a history of loss of weight, slight expectoration, night sweats, and afternoon fever—symptoms that had been present for the previous three years. The woman was frail, with extensive involvement of the right upper lobe, and of the right middle lobe to a lesser degree. The lower lobe was slightly involved, with considerable fibrosis throughout the right lung. The apex of the left lung was also slightly involved; the lower lobe was practically normal. Artificial pneumothorax was begun, Feb. 6, 1915, in the right pleural cavity. Some difficulty was experienced because of pleural adhesions, and only a partial collapse was secured. Injections were continued at intervals until July. Meanwhile, between that time and the previous date of April 25, she had been absolutely free of fever. In July the injections were discontinued, and for a number of months the patient improved and continued to do well. Her surroundings were poor and she took practically no care of herself from that time on. May, 1917, she reported that she was not doing well at all and she looked very thin, coughed a great deal and expectorated considerably.

Case 3.—G. P., a schoolgirl, aged 15, American, had suffered from the disease for six months. She complained of high afternoon temperature ranging from 102 to 103 F., of drenching night sweats, of loss of weight, etc. The right upper lobe and the upper part of the right middle lobe were involved throughout. The right inferior lobe was practically normal. The left apex showed a slight involvement. The left lower lobe was normal. Artificial pneumothorax was induced in October, 1915, and within a few weeks' time after this procedure the patient showed great improvement. Injections were continued until the following July. By this time, she had gained 20 pounds and I decided it would be safe to stop the injections. In two months' time, however, she began to have some cough and slight afternoon rise of temperature. There were a few râles in the right upper lung. The right pleural cavity was again injected and the compression has been continued until the present date. She has been without fever and any symptoms of tuberculosis for months, and at the present time I consider her case arrested.

Case 4.—M. H., a man, aged 27, American, single, sailor, reported that this present trouble had begun about a month and a half before the first injection, with cough, night sweats, and loss of weight, appetite and strength. He had been expectorating a considerable amount of purulent sputum. Two days before he was seen, he had a pulmonary hemorrhage of rather large amount. This was followed in about twelve hours by a second hemorrhage of rather large amount. This was followed in about twelve hours by a third hemorrhage. Since that time he had been coughing up a considerable amount of black blood. Examination revealed dulness, and a great many bubbling râles in the left upper lobe. Nitrogen gas was injected at intervals of two days until the lung was collapsed. After this, there was no further hemorrhage, and ten days later the patient reported that he had greatly improved. The highest temperature after the injection was 99.4, and after that time it was normal. He had very little expectoration, the sweats stopped, the appetite improved and he gained a great deal in weight and strength. March 9, the patient had a hemorrhage of about 2 ounces of bright red blood. I injected 1,200 c.c. of nitrogen gas into the left pleural cavity. There was no further hemorrhage, and the improvement has continued until, at the present time, the disease is arrested.

Case 5.—L. A. H., a housewife, aged 28, American, was referred by Dr. Gavin Hamilton. The trouble began in January, 1916, with hemorrhage, after which she began to decline in weight. There was very little expectoration, with afternoon rise of temperature ranging from 99 to 100. Examination revealed a frail woman weighing 93 pounds with tuberculosis of the right upper lobe. The diagnosis was confirmed by the roentgen ray. February 22, artificial pneumothorax of the right pleural cavity was begun. The injections continued without incident until March 10, 1917. In June, 1917, she presented no signs of the disease, had no abnormal temperature, cough nor night sweats, and had gained 28 pounds in weight. The case was arrested.

Case 6.—R. H., a bricklayer, aged 30, American, single, referred by Dr. C. U. Patterson, had been ill with the present trouble since November, 1915. The patient complained of free and purulent expectoration, night sweats, considerable afternoon rise of temperature, and loss of 30 pounds. Examination revealed a man weighing 140 pounds with involvement of the upper and middle lobe and, to some extent, the lower lobe of the right lung.. There was a cavity in the lower portion of the right upper lobe. The left upper lobe also was somewhat involved. Artificial pneumothorax of the right pleural cavity was begun, March 19, 1916. Further injections were without incident, and the injections were continued at intervals until April 6, 1917. For many months afterward, this patient had no abnormal temperature, and expectoration gradually ceased. In June, 1917, the patient was at work as a night detective, and he said he felt absolutely well. At that time his weight was 172 pounds, a gain of 32 pounds since the beginning of the treatment.

COMMENT

The decided improvement noted in Case 1 was more than we expected. The man's life was prolonged for months. During this period he was more comfortable than formerly. Patient 2, with fibroid chronic tuberculosis, was temporarily benefited, but the improvement was not permanent. In my opinion, such cases are not suitable for artificial pneumothorax, and should not be treated by this method unless large unilateral cavities with profuse expectoration are present. In our cases of acute pneumonic tuberculosis, the improvement was striking. The patients improved rapidly, showing a cessation of night sweats, a marked lessening of the cough, a stopping of the expectoration, a rapid declination of temperature, and a steady gain in weight and well-being. In five cases, pulmonary hemorrhage was successfully combated, and in three of these the pulmonary process was subsequently arrested. We have departed from the beaten path in advocating artificial pneumothorax in unilaterally involved first-stage cases, as exemplified in Case 5. The result in this case was excellent, and the patient is now well. Case 6 demonstrates a type of pulmonary tuberculosis in which the patient may be greatly benefited by an artificial pneumothorax. As was noted in this case, the improvement was rapid in onset and lasting in duration.

A great deal has been written in regard to the question of technic. I have purposely omitted this feature of the work. I should like to suggest in passing, however, that it is better to inject small amounts of nitrogen gas, from 300 to 500 c.c., at short intervals, than to use larger amounts at longer periods. Several of my earlier patients have received temporary setbacks because I injudiciously used from 1,000 to 1,200 c.c. of gas at single injections. It has seemed

to me that pleural effusions have more frequently followed in these cases. On several occasions, high fever with severe vomiting ensued, which, however, ceased in a few days.

No cases of pleural shock, pleural infection, gas embolism, harmful puncture of the lung, or cardiac dilation were encountered. If these dangers were so formidable, this circumstance seems the more striking, because our patients, in many instances, were injected without prolonged preliminary observation, and in every case at the patient's home or in the office. Subcutaneous emphysema was frequently encountered in the earlier cases. But it was never alarming, although in one case the gas infiltrated into the tissues of the neck. We believe that the earlier cases presented this feature because we injected a large amount of gas, and allowed the patients to get out of bed too soon. Excessive coughing will cause this complication, as was demonstrated in one case. The use of a sharp needle for the subsequent refilling injections will aid in obviating subcutaneous emphysema.

In 20 per cent. of the cases treated, pleural effusions occurred. No attempt was made to withdraw this fluid, as the amount was never large. The injections were continued as before, except that smaller amounts were given at longer intervals. We have begun to look on this complication as favorable, because every patient has been benefited when an effusion occurred.

Because of pleural adhesions it was impossible to perform the operation in five of the thirty-two cases. All these five patients are now dead. In three other cases the continuation of the treatment was refused, and only one of these is living. Of the eight untreated patients only one is alive, and he is in very poor condition. Twenty-three of the other twenty-four patients are living. The patient who died (Case 1) was a hopeless third-stage consumptive. As four, or 12.5 per cent., of the total number of cases, were unimproved by the treatment, it was discontinued. Nineteen, or 80 per cent., of the twenty-four patients treated were greatly improved. Of these, six, or 20.5 per cent., were classified as improving, and thirteen, or 54 per cent., as arrested. It is significant that 96 per cent. of the patients treated are living.

The improvement in the patients' clinical symptoms was in most cases very rapid. The fever ceased, or fell considerably, night sweating ceased, the sputum decreased, the appetite improved, and the patient gained rapidly both in strength and weight.

CONCLUSIONS

We feel that a procedure which will bring about an arrest in 44 per cent. of the cases, or 32, in which the method was tried, and 60 per cent. of the cases treated, has a well established place in our therapeutic armamentarium. First-stage cases unilaterally involved should be treated by an artificial pneumothorax, and I am of the opinion that the time is not far distant when it will be more generally done. In the future we should select our cases more carefully, and give the earlier first-stage cases the benefit to be derived from an artificial pneumothorax.

Clay Pipe as a Breast Pump.—According to *Le Nourrisson*, a woman seeking a position at Paris as a wetnurse kept her breasts in good condition by pressing the bowl of a clay pipe over her nipple, and sucking the milk herself through the pipe-stem. This autosuckling breast pump by means of a tobacco pipe was suggested by Mesnard in 1743 to spare fissured nipples.

THE MARGIN OF ERROR IN THE DIAGNOSIS OF NEUROSYPHILIS OF THE PARETIC TYPE

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The study of our errors may injure our vanity, but if honestly made and executed, it proves a healthy "mental catharsis" and materially aids our general understanding. In 1910, Southard[1] reviewed forty-one cases of clinical neurosyphilis of the paretic type that had come to necropsy at the Danvers State Hospital, and found an error of 15 per cent. in those cases that the staff had unanimously considered to be general paralysis of the insane. At the same time, the necropsy reports in 186 cases in which this disease was not considered clinically were studied, and two of these were found, by the plasma cell criterion, to be general paralysis of the insane. The cases considered in Southard's paper were diagnosed before the general application of biologic tests, and it is my present purpose to determine whether this addition to our diagnostic technic has been beneficial, or whether it has made us careless in our clinical examination to such an extent as to vitiate its usefulness.

The accompanying table shows at a glance the important points found in a study of 168 patients admitted to the Warren State Hospital between January, 1913, and January, 1918, and examined at necropsy. For the sake of comparison, figures taken from Southard's paper are placed in an adjoining column.

CLINICAL DIAGNOSIS AND NECROPSY FINDINGS IN NEUROSYPHILIS OF THE PARETIC TYPE

	Darling	Southard
Number of cases studied	168	227
Number of cases unanimously diagnosed as neurosyphilis of the paretic type	45	41
Number of cases unanimously diagnosed as neurosyphilis of the paretic type and proved to be that disease at necropsy	45	35
Number of cases about which opinions were divided, with some favoring neurosyphilis of the paretic type	6	20
Number of cases about which opinions were divided, with some favoring neurosyphilis of the paretic type, and proved at necropsy to be that disease	0	8
Number of cases proved to be neurosyphilis of the paretic type at necropsy, but not diagnosed clinically	0	2

The pathologic diagnoses of these cases are based on records made by Dr. Paul G. Weston, to whom I am indebted for aid in their interpretation, and also for making additional microscopic examinations in all doubtful cases. A final diagnosis of neurosyphilis of the paretic type is here based on the presence of ependymitis, chronic lymphangitis, and varying degrees of pial edema in the gross specimen; with cortical gliosis, perivascular infiltration with plasma and round cells, endothelial proliferation, presence of stab cells and disarrangement of cortical architecture in the microscopic section.

From the table it is seen that all of the forty-five cases unanimously diagnosed as neurosyphilis of the paretic type were proved at necropsy to have been that disease. It is worthy of note that every one of these patients was found to have a positive Wassermann reaction[2] in the spinal fluid at some time, and that all of those admitted after July, 1914,[3] gave a paretic colloidal gold curve[4] when the spinal fluid Wassermann

1. Southard, E. E.: Jour. Nerv. and Ment. Dis., 1910, 37, 1.
2. Weston, P. G.: Jour. Med. Research, 1914, 30, 377 (Wassermann technic used).
3. Prior to 1914, the colloidal gold test was not a routine procedure.
4. Weston, P. G.: Darling, I. A., and Newcomb, P. B.: Am. Jour. Insan., 1915, 71, 774 (colloidal gold test used).

reaction was positive. In several of these cases there were argument and divergence of opinion relative to the possible presence of complicating factors, such as epilepsy, gross sclerotic lesions, and toxic conditions secondary to heart and kidney disease. In spite of this, a definite preference for paresis as the basic condition was expressed by every one present at the conference.

There were six other cases which some of the staff members believed to be paresis, but concerning which the opinions were not unanimous. When these patients were examined microscopically at necropsy, none of them showed evidences of cerebral syphilis. It is also interesting to observe that five of these six patients failed to give positive serologic signs of syphilis in either the blood or the spinal fluid, and that the sixth patient died before any specimens for laboratory tests could be obtained.

I believe that many errors are made by placing too much dependence on one laboratory examination of the blood and spinal fluid. Several workers have drawn attention to the fact that the blood of a syphilitic will frequently be found negative to the Wassermann reaction at one time and positive at another. The records of the Warren State Hospital show many instances of this and also numerous similar irregularities in the findings in the spinal fluid examinations. Because of this recognized liability to variation in serologic findings, all the physicians presenting cases before the hospital staff have been very careful to have several specimens of blood and spinal fluid examined in all questionable cases before asking the staff to aid in the final classification, and this has, without doubt, aided materially in making accurate diagnoses.

These findings confirm the opinion that I expressed[5] in 1915, namely, that with the aid of modern laboratory methods, probably 100 per cent. accuracy could be obtained. It does not necessarily follow that this high percentage could be maintained indefinitely; but the facts presented in this study prove that the error in diagnosing neurosyphilis of the paretic type can be made almost negligible if a careful clinical examination is combined with repeated serologic tests made by a competent laboratory worker.

5. Weston, P. G., and Darling, I. A.: Am. Jour. Insan., 1915, **72**, 325.

School Lunches.—Along with other sociologic problems of increased importance during the war, the subject of school lunches for children in the large cities, particularly, has been the subject of augmented interest. The New York School Lunch Committee, maintained by the New York Association for Improving the Condition of the Poor, has published information concerning the work of the committee in New York, where lunches are provided in thirty-five of the 208 schools of the city. On account of the increased cost of everything, the price of the dishes of these lunches has had to be raised somewhat, and still the income has not equaled the expenditure for food and service, to say nothing of the cost of equipment. The income from lunches in thirty-four of the schools during the period from 1916 to 1917 was $38,369.81, while the operating costs, including capital expenditures, amounted to over $60,000, leaving a deficit of nearly $22,000. The need for this work has been demonstrated, and its good results have been apparent not only in the benefit derived by the children, but also in the example set for the parents at home, where diet conditions have been improved. The committee says that there is an almost universal belief among those who have seriously considered the problem that school lunch work is school work and should be taken over by the board of education. Heretofore, the funds have come from public-spirited citizens.

THE PRESENCE OF SPIROCHETES IN THE KIDNEY*

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In May, 1917, at Tokyo, Futaki demonstrated spirochetes in the urine and the renal casts of typhus-infected kidneys, and reported them as the specific causative agent of typhus fever. Two months later, Futaki's report was discussed by Miyashima, Kusama and Koga. Miyashima and Kusama had not been able to find any spirochetes in the kidneys or other organs of experimental typhus-infected animals (rabbits and guinea-pigs). Koga had found many spirochetes (the *Spirochaeta smegmatis?*) in the urine of patients suffering from different diseases and also in healthy persons, but he could not find any points in which morphologically the spirochetes differed from the spirochetes of Futaki. There was, however, a stronger pulse than in the presence of spirochetes in the kidneys. For control examination, we observed many kidneys, which were mostly affected

TABLE 1.—CASES EXAMINED AT NECROPSY

No.	Age	Sex*	Diseases	Spirochete
1	10	♀	Chronic nephritis	+
2	18	♀	Tuberculous appendicitis; caries of ileum	—
3	20	♀	Acute nephritis; uremia	++
4	20	♂	Chronic nephritis	+
5	20	♂	Pulmonary tuberculosis	—
6	21	♂	Tetanus	—
7	22	♂	Suppurative appendicitis, peritonitis and acute nephritis	—
8	23	♂	Nephrolithiasis; uremia; hemorrhagic nephritis	+
9	25	♀	Pulmonary tuberculosis; acute nephritis	+
10	27	♂	Chronic nephritis	+
11	28	♀	Chronic parenchymatous nephritis	++
12	28	♀	Suppurative oophoritis	+
13	28	♀	Suppurative nephritis	+
14	29	♂	Valvular endocarditis	+
15	30	♂	Chronic nephritis	—
16	31	♂	Valvular endocarditis	—
17	32	♀	Multiple cystic kidney	++
18	37	♀	Diabetes mellitus; chronic nephritis	+
19	38	♀	Puerperal nephritis	—
20	40	♂	Parenchymatous nephritis	+
21	41	♀	Chronic nephritis	+
22	44	♀	Acute nephritis; septicemia	—
23	45	♀	Multiple cicatrization of the kidney	—
24	46	♂	Contracted kidney; pyemia	—
25	47	♂	Pulmonary tuberculosis; chronic parenchymatous nephritis	—
26	47	♂	Pulmonary tuberculosis; acute parenchymatous nephritis	+
27	47	♂	Hepatic cirrhosis; hepatic carcinoma	—
28	54	♂	Lead intoxication; chronic nephritis	—
29	54	♀	Hepatic carcinoma; contracted kidney	—
30	54	♀	Ulcerative endocarditis of aortic valves	+
31	54	♀	Hepatic cirrhosis	—
32	55	♀	Chronic nephritis	+
33	61	♂	Gastric carcinoma; chronic nephritis	+
34	61	♂	Chronic nephritis	+
35	61	♂	Chronic nephritis	+
36	62	♂	Gastric carcinoma; chronic nephritis	+
37	64	♂	Contracted kidney	+
38	65	♀	Suppurative nephritis	+
39	69	♀	Contracted kidney	+
40	72	♂	Cerebral apoplexy; chronic nephritis	—
41	72	♂	Sarcoma of the leg; phlegmon; hemorrhagic nephritis	+
42	76	♀	Contracted kidney	—
43	77	♀	Chronic nephritis	—
44	80	♀	Valvular endocarditis; congestive induration of the kidney	+
45	..	..	Acute parenchymatous nephritis	—
46	..	..	Contracted kidney	—
47	..	..	Contracted kidney	—
48	..	..	Congestive induration of the kidney	—
49	..	..	Multiple cystic kidney	++
50	..	..	Contracted kidney	—

* In this column, ♂ denotes male and ♀ female.

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by acute and chronic nephritis, in which casts were present. These we stained by Levaditi's method. We found many silver-stained spirochete-like bodies in the casts of kidneys in different diseases. It may be said, therefore, that the question of the presence of spirochetes in the kidneys in various diseases other than typhus fever is such an interesting problem that more attention should be paid to it. We have examined many kidneys in both dead and living bodies harboring various diseases, and we here record the results of our observations.

We have examined fifty kidneys of dead bodies and twenty-six of living bodies in the course of operation and found spirochetes in twenty-five of the former and in fifteen of the latter. The results are set forth in the accompanying tables.

The spirochetes in the kidney were found mostly in hyaline casts, hyaline clots and also in the granular substance of the cortex, but not so many were found in the medullary substance. We have also noticed two cases of hyaline clots in Bowman's capsule, and two cases of homogeneous and granular casts in con-

TABLE 2.—CASES EXAMINED AT OPERATION

No.	Age	Sex*	Diseases	Spirochete
1	20	♀	Left tuberculous kidney	+
2	24	♂	Left tuberculous kidney	—
3	27	♀	Right tuberculous kidney	—
4	28	♂	Left tuberculous kidney	+
5	31	♂	Tuberculous kidney	—
6	34	♀	Right tuberculous kidney	+
7	35	♂	Left tuberculous kidney	+
8	38	♂	Nephrolithiasis	—
9	40	♂	Left tuberculous kidney	+
10	41	♂	Right tuberculous kidney	+
11	54	♀	Left tuberculous kidney	+
12	..	♂	Right tuberculous kidney	+
13	..	♂	Right tuberculous kidney	+
14	..	♀	Right tuberculous kidney	—
15	..	..	Left tuberculous kidney	+
16	..	♀	Hydronephrosis	+
17	..	♂	Left tuberculous kidney	+
18	..	♂	Right tuberculous kidney	+
19	..	♂	Tuberculous kidney	—
20	..	♂	Left tuberculous kidney	+
21	..	..	Tuberculous kidney	+
22	..	..	Tuberculous kidney	—
23	..	♂	Left tuberculous kidney	—
24	..	♂	Right tuberculous kidney	—
25	..	♂	Tuberculous kidney	+
26	..	..	Right tuberculous kidney	—

* In this column, ♂ denotes male and ♀ female.

genitally cystic kidneys. In contracted kidneys, we found spirochetes in the so-called cysts of retention. The location of the spirochetes in the casts of the urinary tubules was not always constant. In the same cases, we occasionally found only hyaline clots, but no other clots, and in from ten to twenty preparations we also found a few of them.

The spirochetes we found we stained a deep black, according to Levaditi's method. They formed delicate spiral curved organisms, their average length being from 6 to 10 microns. The smaller forms were from 4 to 5 microns in length. Organisms 22 microns long have been observed, both ends of which are pointed. Morphologically, they may be divided into three types. Type I is much like the *Spirochaeta pallida*, particularly in its spiral form. Type II shows an irregularly curved spiral, while Type III is much broader than Type I or II, and its curves are much coarser and less regular.

What is the origin of our spiral bodies? If they were true spirochetes, they could be determined only by more minute examination, namely, by dark field illumination as living bodies and by Giemsa's staining as final objects. Our examinations, however, have not yet given satisfactory results. Occasionally we have noticed brown-stained irregular spiral forms in the silver-stained preparation, but it cannot be said that the mere finding of spiral forms is an evidence of the presence of true spirochetes. The presence of the spiral bodies in question which were morphologically difficult to differentiate from true spirochetes, without being related to any definite disease, is a very important fact.

In 1912 Le Play, Sézary and Vallery-Radot[1] found spirochetes in the kidney. Their report is very interesting, as the spirochetes they found seem to resemble our spirochetes. Le Play examined the kidneys in question according to Belltali and Vorpino's method and found black-stained filament bodies in the casts and exudate of the excretory and secretory ducts in cases of tuberculosis, arteriosclerosis, and lead intoxication associated with acute or chronic nephritis. There were, however, absolutely no suspicious signs of any syphilitic changes in the history of the case, nor in the Wassermann reaction, nor at the necropsy. The filament bodies much resembled *Spirochaeta pallida* and were found mostly isolated or else in groups in the cortical substance, but they were not found at all in the interstitial tissue, glomeruli or blood vessels. They were named *Pseudotreponema*. They were very much like the *Spirochaeta pallida* found in the urine of syphilitic patients, as reported by Hirschberg, McLennan, Dreyer and Toepel, and Barth and Michant; also in syphilitic kidneys, as reported by Le Play and Sézary, and by Faroy. For this reason, Le Play said that attention must be paid to spiral bodies in the urine and the kidneys. Ours and Le Play's spirochetes very much resemble one another and cannot be found elsewhere. It is difficult to assert, therefore, that the spirochetes found in the urine or in the renal casts are the specific causative agents in definite diseases and also in other spirochetal diseases. By means of dark field illumination and Giemsa's staining method, we examined centrifugalized casts in the urine of several nephritic patients and experimental nephritic animals, but none of the observations brought any satisfactory results.

SUMMARY

1. By Levaditi's method we have found many spirochetes in the hyaline casts and hyaline substances in urinary tubules, without relation to any diseases. Further and more minute attention must therefore be paid to the study of spirochetes in the kidneys.

2. Our spirochetes are found not only in the casts, but also in the hyaline or granular substances located in the cortical substances, in urinary tubules, in Bowman's capsule, and in cysts. But they have not yet been found in the blood vessels, in the interstitial tissues, or in the cells.

3. Our spirochetes may be divided into three types.

1. Le Play, A.; Sézary, A., and Vallery-Radot, P.: Compt. rend. Soc. de biol., 1912, **73**, 635.

Obligation to Care for the Child.—The war cloud dims our vision of the facts at home. But in war or peace, there is this constant struggle for a living and a life. Today it is the mother in her distress that needs help and care; tomorrow it is the infant new-born; the third day it is the talking and walking child. For, whenever the one or the other is found, the tale of inadequate service, of danger, of damage, of disease and death is nearly the same, varying a little in local color but never in substance.—Dr. Leslie Mackenzie, Report on Scotland to Carnegie United Kingdom Trust.

Clinical Notes, Suggestions, and New Instruments

REPORT OF A CASE OF GONOCOCCIC ENDOCARDITIS

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The rare occurrence and the difficulty of establishing the diagnosis would seem to warrant the reporting of this case of gonorrheal endocarditis.

History.—Private F., aged 19, admitted to the medical service of the Post Hospital, Plattsburg Barracks, N. Y., Sept. 19, 1917, complained of frequency of urination accompanied by a sense of burning, dull pain in the lumbar region, painful erections, and a profuse, purulent urethral discharge. The patient gave a definite history of exposure seven days prior to admission, and stated that he did not report for the regulation venereal prophylactic treatment. The fourth day after exposure he noticed a swelling of the meatus urinarius, and experienced a stinging sensation on urination. The following day the pain grew worse, and milking of the penis revealed a drop of mucopurulent discharge. Subsequently the discharge became more profuse and purulent, and chordee developed, which established clinically the outward picture of acute gonorrhea. The previous medical history was negative.

Physical Examination.—There was a profuse, purulent urethral discharge. The penis was swollen and tender. The testicles were apparently normal. Examination of the heart, lungs and joints revealed no external evidence of the infection. Urinalysis revealed a large amount of albumin, and an abundance of leukocytes. A smear of the discharge stained by Gram's method showed many polymorphonuclears, several of which were crowded full, some even bursting, with definite gram-negative, biscuit-shaped diplococci. Very few extracellular organisms were observed. A planting of the discharge was made to a plate of 5 per cent. glucose-agar enriched with one part in ten of ascitic fluid; and a second planting was made to a plate of starch-agar prepared according to Vedder's formula.[1] The blood pressure was normal. A leukocytic count gave 13,800 leukocytes, with 74 per cent. polymorphonuclear neutrophils. A specimen of blood was taken for the gonococcic complement fixation test, which at a subsequent date was reported positive.

Clinical Progress.—The usual clinical course showed no interruptions, the discharge continuing for several days. Smears stained by Gram's method still showed the presence of gram-negative intracellular diplococci. The other symptoms gradually subsided, the leukocyte count and the temperature returning to normal. The patient was up and about the ward for two or three days when he began to complain of pain in the right ankle, with swelling and tenderness, which later became so severe that he was again put to bed. There was a slight rise of temperature, and the leukocyte count increased to 14,000. The symptoms grew rapidly worse; the periarticular tissues becoming swollen and edematous, and there were pain and tenderness, marked redness, and impairment of function. The intense redness and extreme sensitiveness of acute articular rheumatism, however, were not present. There were no sweats; the temperature ranged between 99 and 102 F., the pulse averaged 80 per minute, and the respirations were practically normal. Urinalysis at this time revealed gonorrheal shreds, a trace of albumin, a few white blood cells, hyaline casts, and squamous and round celled epitheliums. The clinical symptoms continued in the ankle three days and began to subside, only to reappear, however, with equal severity, a few days later in the right elbow. At no time was there any effusion in the joint, and after the disappearance of the pain and swelling, there remained no evidence of former involvement. The clinical picture of the condition at the elbow was similar in all respects to the one at the ankle; and the migratory character of the disease was shown in the subsequent involvement of the right shoulder, right wrist and left knee. October 10, ten days after the patient had taken to his bed with arthritis, he had a slight chill which was followed by a sudden rise of temperature, weakness and dyspnea, and some precordial discomfort. Examination of the heart elicited a faint blowing systolic murmur at the apex. The pulse was arrhythmic, soft, compressible, and showed no dichrotism. A count of the white cells gave 17,000, with 78 per cent. polymorphonuclears. A smear from the urethra still showed a few gram-negative diplococci. The symptoms referable to the knee joint, though less severe, still persisted. The progress of the case showed slight fluctuations, but nothing eventful for a period of ten days. A comparison of the former cardiac findings with the present demonstrated a marked loss of muscle tonus, the booming quality of the first sound being replaced by a feeble, irregular cardiac pulsation. The characteristic variations of the murmur were well marked. At no time was the temperature above 103 F. Blood count revealed a polymorphonuclear leukocytosis. Blood culture was negative. The urine contained pus and an increased amount of albumin. During the next few days the patient improved slightly, but this proved to be only temporary, as he soon lapsed into his former state, the temperature increasing to 103.8 F., the respirations becoming shallow and increased in frequency, and the pulse rapid, irregular and easily compressible. The cardiac sounds grew more feeble and distant, and the murmur was at times inaudible. He grew progressively worse during the following forty-eight hours, expectorated frothy sputum, became orthopneic and profoundly toxic, and died.

Treatment.—At first remedial measures were directed toward the clearing up of the urethral discharge. Later the arthritis was combated by the use of polyvalent gonococcic vaccine (Army Medical School) beginning with 0.5 c.c. as an initial dose and increasing to 1 c.c. given at four day intervals for five doses. Later, on the theory of the non-specificity of proteins, triple typhoid was substituted. Hexamethylenamin and salicylates were administered in appropriate doses, and a course of hydrotherapy followed. Despite the recognized cardiac therapy, the termination of the case was inevitable.

Laboratory Findings.—After twenty-four hours' incubation at 37.5 C., the glucose-ascitic-agar, and starch-agar plates were examined and the most suggestive looking colonies picked and transferred to tubes of blood agar, and Vedder's starch medium. Similar colonies were picked and stained and found to contain biscuit-shaped gram-negative diplococci. The following day the tubes were examined, and those found to contain only the gonococcus-like organisms in pure culture were used as a stock culture from which to make subsequent study. The cultural characteristics exhibited by this organism, as it was carried through the various mediums, were apparently morphologically identical with the gonococcus. Necropsy being refused, a few cubic centimeters of the heart's blood were aspirated and plantings made to the mediums mentioned above. After twenty-four hours' incubation, the suggestive colonies that appeared on the surface of the mediums were carefully studied by carrying them through the various mediums, and were found to correspond identically with the organism isolated from the urethral discharge.

1. Vedder, E. B.: Jour. Infectious, Dis., 1915, **16**, 385.

Return Cases of Diphtheria.—J. Langer recently analyzed in the *Jahrbuch für Kinderheilkunde* the experiences with 7,701 cases of diphtheria in recent years at the Graz and Prague hospitals. There were ninety-seven return cases, a total of 1.5 per cent. The children were kept in the hospital until the secretions of nose and throat gave negative findings on one or more examinations. The persisting carriers, he states, should be isolated in a convalescent home and the throat and nose treated with pyocyanase, sodium sozoiodate, hydrogen dioxid, etc. This same treatment should be applied to the persons in the environment of a case, as in his experience, from 6 to 10 per cent. of the contacts harbored the bacilli. His article is summarized in the *Correspondenz-Blatt*.

Military Medicine and Surgery

A ROENTGEN STUDY OF ONE THOUSAND CHESTS, AT CAMP DEVENS, MASS.

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During the six months from Oct. 12, 1917, to April 19, 1918, more than 1,000 chests have been examined roentgenologically in the roentgen-ray laboratory at Camp Devens, Mass. The findings in these cases have proved interesting enough to warrant summarization, and it is my purpose in this paper to give an account of the study. Some phases of the roentgen interpretation of pulmonary disorders here presented are not new, and the material presented is merely corroborative. Some of the phases, however, are practically new, and the ideas expressed are based on material previously not available. Where generalities seem to have been drawn without sufficient substantiation, I hope to establish and extend these conclusions by further and more detailed study.

The patients dealt with in this study are men between the ages of 21 and 30 — officers and enlisted men of the Army. A few rare cases of officers above the age of 30 are included in this study. All these men had passed the preliminary examination of local physicians. They have been studied in our laboratory only on the request of medical officers in this camp either because of well defined lesions or because of suspected pulmonary disorder. Hence our statistics show a relatively small number of normal respiratory tracts.

In practically every case reported in this paper, the roentgen findings have been substantiated by the physical and clinical findings of examining surgeons. Daily consultation with the clinicians has assured me that the roentgen signs here described are definite and constant for the conditions to which they are ascribed. Doubtful cases have not been made a part of this discussion unless the uncertainty of interpretation has been distinctly pointed out.

Roentgenograms were made in every case here recorded, the roentgenoscope having been used for further study wherever necessary.

Pulmonary disorders have been found to occur as shown in Table 1. In this classification several cases

TABLE 1.—OCCURRENCE OF PULMONARY DISORDERS

	No.
Individuals examined	1,259
No disease found	405
Tuberculosis	368
Chronic bronchitis	49
Bronchopneumonia	61
Lobar pneumonia	258
Fibrous pleurisy	124
Interlobar pleurisy	3
Pleurisy with effusion	25
Hydropneumothorax	3
Empyema	7
Emphysema	2
Enlarged mediastinal glands	1

in which complications occurred are tabulated under each of the conditions found. Hence the total number of cases is found to be somewhat greater than the total number of individuals examined.

TUBERCULOSIS

Pulmonary tuberculosis is demonstrable on the roentgenogram even in its earliest stages. Success in demonstrating the tuberculous lesion depends on the care in the technic and on the keenness of the interpreter.

The most definite signs of active pulmonary tuberculosis as seen on the roentgenogram are soft, fuzzy, flaky shadows in the areas occupied by the linear markings of the normal lungs. When these shadows are found at the periphery and are mottled as if broken up with shadows indicative of peribronchial thickening leading to them, we consider them characteristic of the acute, active tuberculous lesions. The soft shadows are interpreted as tubercles with areas of congestion about them, and the thickening of the trunks as lymphatics draining the infected area. Soft mottling in the apexes with peribronchial thickening leading to it we consider the most definite sign of active phthisis presented on the roentgenogram.

When, however, the shadows appear dense and are accompanied by nodular, well defined, clean cut peribronchial thickening which extends to the periphery, we consider them indicative of healed, or at least inactive, tuberculosis.

While these two extremes are readily detectable in the roentgenogram, it is often very difficult to interpret less marked cases. Often the shadows are appreciated only by well trained eyes, and much practice is necessary to give the examiner any degree of skill in the interpretation of tuberculosis in ill defined cases.

With regard to the relative frequency of occurrence of the tuberculous lesion, the lungs may conveniently be divided into three areas:

1. The upper region from the apex to the hilum is considered the tuberculous area. In this region by far the greatest number of infections are found. Ninety-three per cent. of the positive cases studied showed the lesion in this region; in 53 per cent. of these the lesion was in the right upper lobe; in 28 per cent. the lesion was found in the left upper lobe; in 11 per cent. there were lesions in both upper lobes.

2. The middle region from the hilum to the fifth rib in front is considered the intermediate region in which tuberculosis is occasionally found. Less than 10 per cent. of our positive cases showed tuberculosis in this region.

3. The lower region from the fifth rib to the diaphragm is considered the nontuberculous area where lesions are rarely found. Among all the 368 positive cases, only five showed shadows consistent with tuberculosis in the lower lobes. Two of these had lesions throughout all parts of both lungs; one had lesions in the upper, middle and lower lobes on the right side; one had lesions in the upper and lower lobes on both sides; one had a doubtful localized area of infection in the right lower lobe not verified by the clinicians.

Reference to Table 2 shows that more than half of the cases suspected of tuberculosis were found to be negative. In making an interpretation of normal lungs, it is appreciated that no lungs are absolutely free from some pathologic condition. The term is used to describe that condition on the roentgenogram consistent with shadows shown on plates made of individuals with no symptoms and with normal physical and physiologic signs. In some cases lesions were found in several regions of the lungs. For the sake of convenience in classification these are recorded separately in the table. For this reason the total number of instances recorded is greater than the actual number of cases.

I do not consider opacity in one of the apexes as compared with the other a significant factor in the

interpretation of pulmonary tuberculosis. This difference in opacity may be caused by a variation in penetrability on the two sides due to asymmetrical density of the sternomastoid muscles, to thickened pleura, or to a contracted apex.

Our study shows that hilum thickening cannot be considered a safe criterion on which to base a suspicion of pulmonary tuberculosis; for while an increase in the area and density of the hilum shadow may be very common in cases in which a definite pathologic condition is found, there are many cases which show marked thickening at the hilum with no signs of infection in the lungs. Seventy-nine of our cases showed marked density in both hila with no evidence of tuberculosis in the parenchyma of the lungs. This suggests the possibility that there is a good resistance to tuberculosis at the hilum and that these cases represent those in which the infection was inhibited at this place. The hilum resistance is emphasized by the fact that definite hilum tuberculosis was found in only four of the cases studied.

I am heartily in accord with the principle that pulmonary tuberculosis can be fairly and definitely diagnosed only with the combined consideration of clinical, physical and roentgen findings. There are instances, however, in which the roentgen signs are decisive even though physical signs are not found. Especially is this true in the cases of deep seated infections, and incipient tuberculosis in a part of the lungs other than the seat of the main invaded area. The fact that many tuberculous lesions are not found on physical examination, and that lesions are frequently larger in extent than determined by physical examination, would lead to the generalization that many cases of chronic fibroid tuberculosis give few or at least very indefinite signs on auscultation or percussion.

TABLE 2.—LOCATION OF TUBERCULOUS LESIONS

	No.	Per Cent.	
Cases examined for tuberculosis	773	.....	
Practically normal lungs	326	.....	
Hilum markedly thickened, but no signs of tuberculosis	79	.....	
Total number of negative cases	405	.....	
Total number of positive cases	368	.....	
Tuberculosis, active, right upper lobe	121	31.9	53.2
Tuberculosis, inactive, right upper lobe	81	21.3	
Tuberculosis, active, left upper lobe	70	18.	28.5
Tuberculosis, inactive, left upper lobe	40	10.5	
Tuberculosis, active, both upper lobes	32	8.4	11.
Tuberculosis, inactive, both upper lobes	10	2.6	
Tuberculosis, active, right upper and middle lobes	6	1.6	
Tuberculosis, inactive, right upper and middle lobes	3	.79	
Tuberculosis, active, right middle lobe	4	1	
Tuberculosis, inactive, right middle lobe	2	.52	
Tuberculosis, active, right upper, middle and lower	1	.26	
Tuberculosis, active, both hila	2	.52	
Tuberculosis, active, left hilum	3	.79	
Tuberculosis, active, both lower lobes	1	.26	
Tuberculosis, active, all parts of lungs	2	.52	
Tuberculosis, doubtful, right lower lobe	1	.26	
Tuberculosis in upper area	366	93.	
Tuberculosis in middle area	23	6.	
Tuberculosis in lower area	5	1.	

In examining roentgenograms of pneumonia patients made shortly after resolution, shadows are seen which appear strikingly similar to those found in pulmonary tuberculosis. I believe that these shadows are caused by sheets of fibrin that are deposited on the pleura at the time of infection. Moreover, when the lobar pneumonia is complicated with a streptococcus infection, on the postpneumonia roentgenograms, along the ascending trunks and in the apexes, there appear shadows identical with those that occur in pulmonary tuberculosis. These gradually disappear and are not found after several weeks. It is important not to make the mistake of interpreting these shadows as tuberculous lesions, and in order to guard against the possibility of such an error the examiner should know definitely whether or not there is a history of recent pneumonia.

LOBAR PNEUMONIA

The roentgenogram has proved to be an important factor in the diagnosis of lobar pneumonia and in following its development. It has been found to be of extreme importance in differential diagnosis and in the detection of effusion. Consequently this study materialized when it was learned that the patients could be transported to the roentgen-ray laboratory without suffering the slightest ill effects. Application of the utmost care in handling the patients has made it possible to roentgenograph them without causing them mental or physical indisposition. Attending surgeons reported in all cases that no patient ever was found to have shown any ill effects resulting from the moving necessary to make the roentgenograms. The patients were placed on operating trucks, drawn to the laboratory through closed corridors, roentgenographed on the trucks, and returned to their wards immediately, the entire process covering not more than ten minutes.

Two hundred and fifty-eight cases of lobar pneumonia have been studied, and these encourage some very definite generalities. The roentgen signs of lobar pneumonia are: (1) marked accentuation of linear shadows from the hila to the apexes, which we propose to call vascular congestion; (2) marked enlargement of the heart shadow; (3) typical shadow of the localized area of consolidation in the lungs, and (4) high diaphragm on the affected side.

1. The vascular congestion appears especially in the upper lobes as soft linear markings with distinct bifurcations, which are different in appearance from the thickened ascending trunks of bronchitis and the peribronchial thickening of tuberculosis in being thicker, smoother, showing more definite branching, and being always definitely bilateral.

These shadows are interpreted as due to the congestion of blood vessels along the bronchi. They have the characteristic appearance of congested blood vessels, and depict what may be conveniently called an acute congestion of the lungs. These shadows also represent a thickening of the lymphatic vessels in increased drainage. The vascular congestion was found in all the 258 cases examined, excepting four, one a very early case not studied further, one a case of the abortive type quickly resolving, and two peculiar cases which showed neither the thickened ascending shadows nor the enlarged heart but only the area of consolidation, nontoxic cases.

The markings in question appear early in incipient pneumonia, and disappear early in resolution. They persist occasionally in cases in which no consolidation appears. In such instances these shadows persisting in the upper lobes and extending into the apexes are apt to be confused with the shadows indicative of tuberculosis. Their persistence sometimes for months makes their interpretation all the more confusing. Clinical history and repeated roentgenograms are valuable in these cases. However, in the majority of cases the shadows indicative of vascular congestion disappear early in resolution.

2. The heart is found to be enlarged both to the right and to the left. Only the right auricle, the left auricle and the left ventricle are distinguishable on the roentgenogram. Enlargement to the left is probably due to increase in size of the right ventricle overlapping the left ventricle, and the apical impulse is assumed to be that of the right ventricle rather than of the left ventricle, so that the enlargement to the left is due to the shadow cast by the right and left ventricles together.

The enlarged heart has been found in every case studied except two. These cases showed the area of consolidation in the lungs, but showed no enlargement of the heart and no vascular congestion, appearing to be cases in which there was only a slight degree of toxicity.

The heart enlarges early. The enlarged heart, with the vascular thickening, has been found in many of the cases before any signs of consolidation have appeared. It seems as though the toxins of the pneumococcus affect the myocardium definitely before localized manifestations in the lungs appear. Besides toxemia, the pulmonary consolidation and hyperpyrexia have been considered as causes of the enlarged heart. The early enlargement detected by the roentgenogram, however, seems to show that the toxemia is the most important factor in the enlargement of the heart.

It is possible that the enlarged heart occurs in other toxemias, though this has not yet been conclusively demonstrated. However, with vascular congestion in the upper lobes, this enlargement is a definite sign of beginning lobar pneumonia. This is clearly demonstrated in cases in which there are definite clinical signs of pneumonia, but in which no consolidation is found. In these cases the roentgen diagnosis is made on the two signs in question.

The cardiac enlargement persists for some time after the consolidation has cleared up and the patient has apparently recovered from the attack. This persistence varies with individuals. I am now making a study of the hearts of patients recuperating from pneumonia. The patients are examined at intervals of one week, and tracings of the heart shadow are made on glass with the roentgenoscope. These tracings, it is admitted, are not as accurate as the seven foot plates, but I believe that they are accurate enough for a study of the relative size at intervals of the same heart. Stature, size of chest, height and weight are factors considered in this study. It appears that the heart remains enlarged for several weeks (varying from four to eight weeks) after all evidence of definite involvement of the lungs has disappeared physically, clinically and roentgenographically. The patients are short of breath and show a rapid pulse with exertion as long as the heart is enlarged. In fact, this inconvenience to the patients when they were supposed to be fit for duty caused their return to the hospital and suggested this study. Clinically, these hearts give no evidence of valvular disease.

Weekly examinations of fifty such cases have been made extending over eight or ten weeks. It was found that in 50 per cent. of these cases the heart continued to enlarge slightly during the first, second and third weeks following discharge from the hospital, after which it gradually assumed its normal proportions. In the other 50 per cent. the heart was found to have decreased in size slightly each week until the normal size was reached, or to have remained unchanged in size for several weeks, finally diminishing gradually to the normal size. The unexpected increase in size of the already enlarged heart during convalescence was probably due to the fact that a strain was put on the heart too soon; but it has been impossible to secure satisfactory data on this point. None of these men were assigned to active duties during this time, but it is possible that they participated in exercises to an extent sufficiently strenuous to embarrass the already weakened cardiac muscles. There is now being developed at this camp a series of graduated exercises for recuperating pneumonia patients, the purposes of which are to strengthen these weakened hearts and to determine more definitely when the men are actually fit for vigorous duty.

3. Consolidation in the lung shows as a definitely localized homogeneous patch varying in density from complete opacity to transluscency. The consolidation may originate near the median line, in which event it may or may not extend to the periphery, or it may be found at the periphery not extending to the inner border of the lung.

The location of the consolidation in the 258 cases studied is summarized in Table 3. Of the 258 cases examined, thirty-one showed no consolidation in any part of the lungs, though the clinical symptoms were definite for lobar pneumonia, the crisis appearing early. No physical signs of consolidation were made out. In these cases the vascular thickening and the enlarged heart were found to be just as typical as in the cases with definite consolidation. Several examinations at intervals of two days showed that no consolidation ever appeared. These findings are in accordance with the idea that the symptoms of pneumonia are dependent more on toxemia than on the extent of pulmonary involvement.

TABLE 3.—LOCATION OF CONSOLIDATION

Area Involved	No.
Both lower lobes	5
Right lower lobe	86
Right upper lobe	17
Right middle lobe	8
Right upper and middle lobes	2
Right middle and lower lobes	5
Right upper, middle and lower lobes	2
Left lower lobe	93
Left upper lobe	6
Left upper and lower lobes	2
Root of left lung	1
No consolidation	31

In several cases consolidation was shown roentgenographically before it was demonstrable by physical signs.

The extension of the consolidation from a small patch to a larger one and from one lobe to another was observed in several of our cases.

Several examinations of the same cases at intervals have led us to believe that the variation in amount of tissue involved in consolidation, and the change in location of the consolidated tissues, may be readily demonstrated roentgenographically.

During resolution, linear shadows are seen traversing the affected area and sometimes running beyond it. These are probably due to the thickening along the bronchi caused by some of the exudate, which has not absorbed, and has been transformed into dense, fibrous masses. These shadows may suggest the fibrosis of chronic tuberculosis. When they are found to have changed in position on several plates or when they finally clear up, it is safe to assume that no tuberculosis is indicated.

The question of cirrhosis of the lung in some of the cases of delayed resolution is now being studied in our laboratory. The evidence from cases thus far observed leads us to believe that cirrhosis of the lungs occurs in some cases.

4. The diaphragm on the affected side, as in other pulmonary disorders, is usually relatively higher than on the unaffected side. For some time the diaphragm on this side remains impaired in its excursion. In some cases after resolution the diaphragm appears irregular on the affected side, appearing to have a fixed point. Roentgenoscopically the diaphragm is fixed or else it has a limited excursion as compared with the nonpathologic side. In some cases, distinct bands of adhesions have been seen extending from the pleura to the diaphragm, limiting its motion.

That the elevation of the diaphragm cannot be used as a definite criterion for predicting the side in which consolidation is to occur has been clearly demonstrated by many of our cases in which the diaphragm was found to be relatively higher not on the affected side but on the unaffected side. The facts that in some of these cases the patients complained of pleurisy pain on the side opposite the consolidation, and that in three such cases the pneumonia was followed by a pleuritic effusion on the side opposite that in which consolidation occurred, encourage the suggestion that the high diaphragm on the side opposite the consolidation is an indication of pleurisy; but our statistics are too meager for a bold presentation of this position.

FLUID WITH LOBAR PNEUMONIA

In the presence of consolidation it is difficult to determine when fluid is present in sufficient amount to demand aspiration. The fluid does not appear the same on the roentgenogram as in pleurisy with effusion, when the patient is roentgenographed in the prone position. Instead of the typical S-shaped shadow found in simple pleurisy with effusion, the fluid in pneumonia seems to gravitate to the posterior part of the thorax, giving only a very faint shadow over the entire side, which may easily escape detection. This appears to be due to the fact that the portion of the lung solidified by the pneumonia makes compression of the lung impossible; and owing to the resistance offered by this mass, the fluid spreads out over the whole thorax. The difficulty thus presented has been obviated to some extent by making the roentgenogram with the patient in a semiupright position. The fluid then gravitates to the lower part of the chest and may be more readily seen. In case the fluid is purulent, as in empyema, reasonable time must be allowed for it to gravitate.

In our series of lobar pneumonia, pleuritic effusion occurred early in many cases, often by the second or third day. Thickened interlobar pleura is often seen and may be so dense as to suggest fluid between the lobes.

BRONCHOPNEUMONIA

It has been quite generally supposed that bronchopneumonia is a bilateral disease. Our study has shown that it is more commonly unilateral. This is shown by reference to Table 4.

Signs of vascular congestion in the upper lobes are not so marked and certainly not so constant as in lobar pneumonia.

The heart is sometimes slightly enlarged, but never to the extent found in lobar pneumonia, and often not at all.

The localized area of consolidation appears more as a mottling than as a homogeneous shadow as in lobar pneumonia. Figuratively, the picture of the infected area in bronchopneumonia seems to have been smeared on the plate with a worn-out brush, while in lobar pneumonia the area of consolidation seems to have been blown on the plate with an atomizer.

The pleura does not seem to be involved in bronchopneumonia nearly as much as in lobar; a thickened pleura is seldom seen.

TABLE 4.—LOCATION OF BRONCHOPNEUMONIA

	No.
Cases observed	61
Bronchopneumonia, both lower lobes	20
Bronchopneumonia, right lower lobe	27
Bronchopneumonia, left lower lobe	14

Several peculiar cases of bronchopneumonia were discovered in the course of this study. The patients, most of them officers, were not indisposed enough to take advantage of a ward bed, but were troubled with a persistent cough, weakness, and slight elevation of temperature. The roentgenograms revealed that these were typical cases of bronchopneumonia, the majority of which were localized in one or both of the lower lobes. Resolution in these cases was slow, the shadows persisting for several weeks.

SUMMARY

I. Pulmonary Tuberculosis:

1. Pulmonary tuberculosis is demonstrable on the roentgenogram even in its earliest stages. It is difficult to describe concisely the appearance of shadows that will enable the roentgenologist, definitely to interpret active and inactive tuberculosis. One can only describe what in general is seen in well defined cases. The specialist instinctively learns to detect these shadows by individual methods.

2. The lungs may be divided into three regions with regard to the occurrence of pulmonary tuberculosis: the upper region, in which tuberculosis is commonly found; the middle region, in which tuberculosis is sometimes found, and the lower region, in which tuberculosis is rarely found.

3. Consultation with conscientious clinicians has led to the conclusion that many cases of chronic fibroid tuberculosis give very indefinite, if any, physical signs.

II. Lobar Pneumonia:

1. Lobar pneumonia and bronchopneumonia are easily distinguishable on the roentgenogram.

2. Lobar pneumonia gives the following roentgen signs:

(1). Vascular-lymphatic congestion in the upper lobes.

(2). Enlarged heart.

(3). Localized consolidation.

(4). High diaphragm.

3. Vascular-lymphatic thickening appears early and disappears early, though its occasional persistence may be confused with tuberculosis shadows.

4. Pneumococcemia shows definitely on the roentgenogram when there are symptoms of pneumonia without consolidation, suggesting that the seriousness of the attack depends more on the toxemia than on the extent of pulmonary involvement.

5. The heart is involved before definite signs of consolidation appear.

6. The cardiac enlargement persists for some time after all signs of involvement of the lungs have disappeared.

7. Consolidation may begin at the roots or at the periphery.

8. High diaphragm on the affected side is suggestive, but cannot be considered a constant sign.

III. Bronchopneumonia:

1. Bronchopneumonia is more commonly unilateral than bilateral.

2. The heart is usually not enlarged in bronchopneumonia.

3. Bronchopneumonia is often overlooked on physical examination, as the symptoms may be indefinite and noncharacteristic.

A BACTERIOLOGIC STUDY OF THE PNEUMONIA OCCURRING AT CAMP PIKE, ARK.

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Pneumonia has been one of the important diseases encountered at the base hospital since the opening of Camp Pike. Table 1 represents the results of bacteriologic examinations of the sputums obtained from sixty patients admitted to the hospital during the months of February and March. The sputum was collected from the patients in sterile Petri plates and sent to the laboratory at once and plated on the surface of human blood agar plates without addition of glucose. The table shows the predominant organisms that developed on the plates and most of the other organisms found after forty-eight hours' incubation, along with the clinical types of the disease with which the bacteria were associated.

The importance of the bacteria predominating in these sputums was substantiated in a number of cases by bacteriologic examinations of the blood during life and of the lungs after death.

From the table it will be seen that pneumococcus pneumonias present but little out of the ordinary. It will be seen that two of the Type II cases were complicated by severe jaundice. Since these data were collected, a number of similar cases have been observed, and as in the two above, all were in colored persons, some of whom were known to have syphilis and one multiple gummas of the liver. The pneumococcus cases form 48 per cent. of the sixty cases in this series. Of these, 21 per cent. were Type I, 34 per cent. Type II and 45 per cent. Type IV. I have seen only one Type III case in the hospital.

In 46 per cent. of the cases, streptococci were the predominating organisms; of these, 46 per cent. were nonhemolytic. These organisms formed colonies similar to the hemolytic streptococci, but had no effect on blood, neither hemolysis nor green formation being observed. The organisms were like the hemolytic streptococci as to morphology, but had more tendency to diplococcus formation, and the chains formed were short. Growth in both was flocculent and collected in the bottom of the broth. In the cases coming to necropsy the pneumonia in which this type of organisms was found resembled the ordinary pneumococcus lobar pneumonia. This type of streptococcus was found in the sputum in two cases diagnosed as influenza, and in the pus from a gangrenous appendix, in greatly predominating numbers.

Fifty-four per cent. of the streptococci found were hemolytic. The lesions found at necropsy in these

TABLE 1.—RESULTS OF SPUTUM EXAMINATIONS

Case No.	Predominating Organisms	Other Organisms	Sputum	Clinical Peculiarities	Complications
1	Hemolytic streptococcus	Nonhemolytic	Tenacious; bloody	Typical lobar crisis	
2	IV	Few hemolytic; viridans	Colorless mucus	Typical lobar crisis	
3	Catarrhalis	Nonhemolytic; hemolytic	Colorless mucus	Whole right side	Effusion tuberculosis
4	IV	.....	Rusty	Typical crisis	
5	I	.....	Rusty	Typical crisis	
6	IV	Catarrhalis; hemolytic	.....	Typical	Cervical abscess
7	Hemolytic streptococcus	Catarrhalis	Mucopurulent	Bronchopneumonia	
8	Diphtheroids	Hemolytic; catarrhalis	.....	Bronchitis; small area of pneumonia	
9	Leptothrix	Viridans; catarrhalis	.....	Postmeasles bronchopneumonia	Empyema
10	IV	.....	Purulent	Typical crisis	
11	Hemolytic streptococcus	Catarrhalis	Mucopurulent	Small area of pneumonia; lysis	
12	Hemolytic	Viridans	.....	Small area of pneumonia	
13	II	.....	Rusty	Lobar; death	Jaundice
14	Nonhemolytic	Hemolytic streptococcus	.....	Measles; bronchopneumonia	
15	Nonhemolytic streptococcus	Catarrhalis	.....	Postmumps bronchopneumonia	
16	I	Catarrhalis	Bloody; tenacious	Lobar; death	
17	Hemolytic	Catarrhalis	Mucopurulent	Lobar; lysis	
18	I	Catarrhalis	Mucopurulent; bloody	Lobar; crisis	
19	I	Pharsicus	Mucopurulent; bloody	Lobar; crisis	
20	Nonhemolytic	Viridans	Bloody	Lobar; crisis	
21	Hemolytic streptococcus	Catarrhalis	Bloody	Lobar; crisis	
22	IV	Catarrhalis	Mucous	Broncho; lysis	
23	II	Catarrhalis	Rusty	Postoperative lobar	
24	IV	Nonhemolytic sicus	Colorless mucus	Lobar; death	Otitis M.; meningitis
25	II	Nonhemolytic streptococcus	Mucopurulent	Lobar; lysis	
26	Nonhemolytic	.....	Mucopurulent	Small area of pneumonia following mumps	
27	Hemolytic streptococcus	Staphylococci; catarrhalis	Colorless mucus	Bronchopneumonia	
28	Hemolytic streptococcus	IV; catarrhalis	.....	Lobar; delayed resolution	
29	Leptothrix	.....	.....	Lobar; crisis	
30	II	Staphylococci	Mucopurulent	Lobar complicating tuberculosis; death	
31	Nonhemolytic	Hemolytic streptococcus	Mucopurulent	Lobar	Mumps
32	Hemolytic streptococcus	Catarrhalis; viridans	.....	Followed tonsillitis; lobar; lysis	
33	Leptothrix	.....	.....	Postmumps bronchopneumonia	
34	Nonhemolytic streptococcus	Leptothrix; hemolytic; catarrhalis	Mucopurulent	Bronchopneumonia; death	Empyema
35	IV	.....	Mucopurulent	Lobar; crisis	
36	IV	Nonhemolytic streptococcus	Rusty	Lobar; crisis	
37	Nonhemolytic streptococcus	Leptothrix	Bloody mucus	Postmeasles lobar; lysis	
38	IV	.....	.....	Postmastoid lobar; death	
39	Leptothrix	Hemolytic streptococcus; catarrhalis	.....	Lobar; lysis	
40	II	Hemolytic streptococcus; staphylococcus	.....	Postotitis	Empyema
41	IV	Nonhemolytic; catarrhalis	Rusty	Postoperative lobar; lysis	
42	IV	.....	Mucopurulent	Lobar; crisis	
43	I	IV and hemolytic streptococcus	Rusty	Lobar; crisis	
44	II	Streptococcus; viridans	Rusty	Lobar; crisis	
45	Nonhemolytic streptococcus	Staphylococcus aureus	Mucopurulent	Lobar posttuberculosis; death	
46	Leptothrix	Hemolytic; catarrhalis	Mucopurulent	Lobar; delayed resolution	
47	Nonhemolytic streptococcus	Viridans	Mucopurulent	Lobar; crisis	
48	II	.....	Rusty	Lobar; death	Jaundice
49	Hemolytic streptococcus	Nonhemolytic streptococcus; catarrhalis	Mucopurulent	Posttonsillitis bronchopneumonia	Empyema

TABLE 1.—RESULTS OF SPUTUM EXAMINATIONS—Continued

Case No.	Predominating Organisms	Other Organisms	Sputum	Clinical Peculiarities	Complications
50	IV	Viridans	.....	Lobar; crisis	
51	II	.....	Rusty	Postoperative lobar; lysis	
52	Nonhemolytic streptococcus	.....	Rusty	Bronchopneumonia	
53	I	Staphylococcus aureus	.....	Lobar; crisis	
54	Nonhemolytic streptococcus	Staphylococcus	Mucopurulent	Lobar	Empyema
55	Nonhemolytic streptococcus	.....	.....	Lobar; lysis	
56	Hemolytic streptococcus	Viridans	.....	Posttonsillitis bronchopneumonia	
57	Hemolytic streptococcus	.....	.....	Lobar pneumonia; death	Pericarditis
58	II	Viridans; hemolytic streptococcus	.....	Postotitis lobar; crisis	
59	II	Nonhemolytic streptococcus	Mucopurulent	Bronchopneumonia; lobar pneumonia	Delayed resolution
60	Nonhemolytic streptococcus	Diphtheroids	Mucopurulent	Lobar; crisis	

Pneumococcus	40%	Streptococcus	40%
Type I	21%	Hemolytic	34%
Type II	34%	Nonhemolytic	66%
Type IV	45%	Leptothrix	0%

cases were of two kinds: 1. A pneumonia similar to lobar pneumonia due to pneumococci, but with a tendency to pus formation. In many cases this was not more marked than that sometimes observed in the pneumococcus cases in others. Abscesses with areas of necrosis varied in extent, sometimes amounting to gangrene of large portions of the lung. 2. Bronchopneumonia in which the lungs were studded with hard, shotlike nodules, which were extremely hard to the palpating fingers. Cut sections of such lung showed

TABLE 2.—FERMENTATION CHARACTERISTICS OF HEMOLYTIC AND NONHEMOLYTIC STREPTOCOCCI

Organisms	Effect on					
	Milk	Salicin	Raffinose	Inulin	Mannite	Maltose
1. Nonhemolytic streptococcus from sputum in lobar pneumonia	—	—	—	—	—	—
2. Nonhemolytic streptococcus from appendix	—	—	—	—	—	—
3. Nonhemolytic streptococcus from lobar pneumonia	—	—	—	—	—	—
4. Nonhemolytic streptococcus from lobar pneumonia	—	—	—	—	—	—
5. Nonhemolytic streptococcus isolated from "influenza"	—	—	—	—	—	—
6. Hemolytic streptococcus isolated from influenza	Acid	—	—	—	—	Acid
7. Hemolytic streptococcus isolated from lobar pneumonia	Acid	—	—	—	—	—
8. Hemolytic streptococcus, bronchopneumonia	Acid	—	—	—	Acid	Acid
9. Hemolytic streptococcus, bronchopneumonia	Acid	Acid	—	—	Acid	Acid
10. Hemolytic streptococcus, bronchopneumonia	—	Acid	—	—	—	—
11. Hemolytic streptococcus, postmeasles bronchopneumonia	Acid	—	—	—	—	Acid
12. Hemolytic streptococcus from mastoid	Acid	—	—	—	Acid	Acid
13. Hemolytic streptococcus from mastoid	Acid and coag.	Acid	—	—	Acid	Acid
14. Hemolytic streptococcus from mastoid	Acid	—	—	—	—	Acid

areas up to 1 cm. in diameter which were dark red and completely consolidated. This form was most commonly observed following measles. The areas in some instances coalesced to form areas, in cases amounting to a lobe. In twenty-five of a series of thirty cases of mastoiditis, streptococci indistinguishable from these were isolated. The remaining five were Type IV pneumococcus infections.

Both the types of streptococci were more frequently complicated by empyema than were the pneumococcus cases. In the hemolytic cases in two instances there was peritonitis.

The fermentation characteristics of the two types of streptococci are shown in Table 2.

Leptothrix organisms predominated on the plates in 6 per cent. of the cases. These were very minute colonies, barely visible to the naked eye, but extremely numerous. There was no effect on blood. The organisms were gram negative, and varied in length from organisms resembling influenza bacilli to long, slightly wavy organisms extending half way across the field. It was not possible to cultivate these organisms beyond one or two subcultures, and their importance is undetermined.

The series is interesting on account of the high percentage of streptococcus infections, particularly those due to nonhemolytic organisms, which were also found associated with cases diagnosed as influenza and in the pus from appendicitis.

PRIMARY AND DELAYED PRIMARY SUTURE IN THE TREATMENT OF WAR FRACTURES

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The treatment of fractures from battle casualties is for the most part the treatment of wounds of the soft parts, plus the added difficulties which the injuries to bony tissue involve.

To understand, therefore, the treatment of fractures, one must thoroughly appreciate the changes which have been made in the treatment of wounds of the soft parts.

American surgery is most fortunate in arriving on the scene when the principles of war surgery have been established. The biblical truths, as laid down by our French and English colleagues, have been founded on no uncertain grounds and have been enunciated in no uncertain terms.

These principles may be stated in this manner:

1. All battle wounds are to be considered as infected.

2. It is necessary to remove all projectiles, clothing and devitalized tissue as early as possible, at least before the twelfth hour after injury.

3. These wounds can then be considered as aseptic in character and a primary suture made, thus converting compound fractures into simple fractures, and appropriate treatment for these simple fractures thereupon instituted.

What a marvelous and astounding change is this in the application of surgical principles since that fatal day in August, 1914. One cannot but stand in awe and wonder at the results that have been achieved as one compares the past with the present: pus, contrasted with a clean lineal scar; continued pain caused by the packing of gauze and constant irrigation, with the peace of being left alone; the long and often painful processes in the restoration to function, with function restored almost voluntarily and swiftly; weeks and months of treatment, with recovery in a comparatively short time.

I say we are most fortunate as surgeons in coming into the war at such a period; the hard and costly

lessons have been learned by the suffering of our allies. We shall be held responsible, and rightly so, if we do not appropriate and practice that which has been laid down for us by the work and at the expense of others.

How have these things come about? By the formation of a trust—a trust composed of the surgeon, the bacteriologist and the roentgenologist, all working harmoniously and constantly together.

Roentgenology.—Every man wounded in battle is roentgenographed immediately on entrance to the hospital, and, generally, while en route to the operating room. A definite description of the fracture is given, and, if a projectile is present, its exact location is made, generally by means of fluoroscopy. These localizations are generally indicated on the surface, by two markings, and the distance and direction from each marking is stated.

Bacteriology.—The bacteriologist determines for us the type of organisms present in the wound. Ninety per cent. of all these wounds are found to be infected by one or more organisms. Here we have both aerobes and anaerobes; the types most commonly found are the stayphylococcus, the streptococcus, the pneumococcus, the colon group and the organisms producing gas gangrene. We have learned from these bacteriologic studies just what course we may pursue in our operative treatment, just what conditions will prevent a successful primary closure, when it will be necessary immediately to open a wound primarily closed, what the indications are for a secondary closure and how soon it may be done (Carrel), etc.

Surgery.—The surgeon in the first place must be a surgeon of the highest character, for he must perform aseptic surgery in a supposedly septic field or at least in a field which has the potentialities of sepsis; his dissections must be clean, his handling of tissues of the minimum, his knowledge of anatomic structures accurate.

I. PRIMARY SUTURES

The primary suture is the method of selection when this can be done. Experience has shown that primary suture may be successfully performed in from 80 to 95 per cent. of the cases. It is obvious that in certain cases primary suture cannot be done, owing to the inability to make a closure, because of the destruction of large amounts of tissue, including skin. But even here the primary suture at times may be accomplished by the aid of a skin flap.

Technic of Primary Suture.—The skin is disinfected with iodin, soap, water and a scrubbing or other methods. The skin edge, together with the tract made by the projectile, is removed. All projectiles and *all* devitalized tissue are removed. Complete hemostasis is performed. The skin edge is accurately approximated without tension.

Results of Primary Suture.—As has been said, primary suture may be done in from 80 to 95 per cent. of all battle casualties, if operation is performed within a proper time. This is generally regarded as within the first twelve hours; but in face cases, the time limit for successful primary suture is slightly increased. According to Lemetre, from July, 1915, to February, 1918, he had performed 2,664 primary sutures with complete success in 2,549 cases, or 95 per cent., partial failure in eighty-three cases, or 3.1 per cent., and complete failure in thirty-two cases, or 1.2 per cent.

The ordinary surgeon would consider these partial failures to be complete cures, for they were stitch abscesses which granulated in a few days and did not affect the deep structures or interfere with the integrity of the wound.

Duval says that in periods of calm at the front, when the patients are received in proper time, 90 per cent. of the wounds can be closed by primary suture; but in times of stress only 30 per cent. may be sutured primarily, delayed primary suture being its substitute.

In cases in which primary suture is done, 95 per cent. are successful. According to Gross, of 759 wounds treated by primary suture, 88.8 per cent. were successful. Thus I might go on giving the results of others' work. So we see that in the hands of good surgeons at the front, when the wounds are received within from eight to twelve hours after the casualty, roughly speaking, from 80 to 95 per cent. of all such wounds, of whatever nature, soft parts or bone, can be treated successfully by primary suture, and, of these primary sutures, from 90 to 95 per cent. are successful.

Advantages of Primary Suture over Other Methods of Wound Treatment.—1. The mortality is greatly decreased, primarily because there is escape from the grave danger of secondary infection, so frequent when the wound is left open. In witness of this fact, the statistics of the hospitals of the interior in France in open wounds show a streptococcus infection of 80 per cent., whereas in fresh wounds from battle casualties there is only a 10 per cent. infection of this nature.

2. The patients suffer less, as they escape the necessity of all secondary and continuous dressings.

3. By primary suture the restoration of function is obtained more quickly and more completely, as there is no amount of scar tissue, or dense adhesions of muscles, tendons and joints, as is so frequently the case when wounds heal by granulation.

4. The period of hospitalization is therefore wonderfully decreased, which is of primary importance from a military point of view.

5. The amount of dressings necessary for the treatment of the wounds is likewise decreased in a marvelous degree, the importance of which cannot be overestimated in a war whose base of supplies is so many miles away.

6. In like proportion, compound, infected fractures are changed into aseptic, simple fractures, and may be treated as such,

It has been said that 10 per cent. of battle wounds, even when the wounded men have arrived at the hospital within the first twelve hours, cannot be primarily closed, mainly in these instances: cases in which the shock is so great that the patients cannot stand the operation within the first twelve hours; deep wounds in which the complete excision of all devitalized tissue is uncertain or impossible; wounds in which no roentgen apparatus being present, the projectile cannot be extracted, and wounds in which the loss of substance is so great that complete closure is impossible. It has been shown that from 5 to 10 per cent. of the primary sutures are not successful, and this is due mainly to the streptococcus.

In an evacuation hospital, all wounds that are seen within the proper time after injury, which are applicable to primary suture, are closed by this method. At the same time, cultures of the wounds are taken. The wounds that must be opened immediately on the bacteriologic report are those primarily infected with the virulent types of streptococci. A bacteriologic report of other organisms does not in the main disturb us.

We know that the mechanical sterilization by the operative procedure of primary suture, together with the action of the human tissue, take care of all other organisms, particularly when in pure culture. The virulent streptococci generally by themselves, and always when associated with other organisms, such as the streptococcus, enterococcus, the gas gangrene group, etc., demand immediate opening of the primary suture.

TABLE 1.—PRIMARY SUTURES OF BONE FRACTURES (LEMETRE)

	Total Cures	Failures	Partial Cures
1. Joints:			
Tibial torsal	15	1	..
Knee	22	1	2
Wrist	20	..	2
Elbow	22	..	3
Shoulder	12	..	1
2. Bones:			
Femur	24	..	2
Leg	64	2	5
Humerus	47	1	3
Form	26	..	2
Clavicle	3	..	..
Ulna	24	..	3
Tibia	2	..	..
Radius	29	..	2
Fibula	46	..	..
Hand	67	2	4
Foot	5	..	5
Skull	26	..	1
Skull and brain	15	1	3
Chest	7	..	..

II. DELAYED PRIMARY SUTURES

The delayed primary suture is the method of wound closure that has been adopted in all those cases in which primary suture would have been done, except for circumstances, generally of military character, that made it inadvisable. The technic of delayed primary suture is exactly that of primary suture, except that the skin is not closed, and a dry sterile dressing is placed over the wound. The skin edge is brought together from three to eleven days later.

A hospital at the front can generally in times of stress keep only 20 per cent. of its beds permanently filled. All patients with primary sutures should be kept at the place of operation for at least ten days, so that the wound may be watched and not subjected to the traumatism in transportation. Therefore, when patients must be removed immediately, within six or seven hours after operation, delayed primary suture takes the place of primary suture.

This method of procedure has been found eminently successful. Patients with delayed primary sutures are sent to the rear within six or seven hours after the initial operation, and the wounds are closed preferably on the second, third or fourth day. The percentage of cures in delayed primary sutures is between 80 and 87. This method allows the beds at the front to be continuously utilized, and adds to the rapidity of recovery over the former methods, according to the statistics of Duval. By delayed primary suture, 32 per cent. of the patients were returned to duty in three weeks, 30 per cent in one month, and 28 per cent. in two or more months.

III. FRACTURES

My particular object is to emphasize the necessity for the early treatment of bone injuries, by primary or delayed primary suture, for this is the keynote to the successful handling of war fractures. To change an infected compound fracture into an aseptic, simple fracture at the outset, is to do away with the greatest difficulties that are found in the treatment of war fractures. It is not my intention to take up the mechanical principle on which fractures, generally compound, of the various bones of the body are to be treated. That is well set forth in the Splint Manual, authorized by the American Expeditionary Forces; but I wish to insist that, by the use of the principles of primary and delayed primary suture, the entire subject of the treatment of fractures has been changed; that one is no longer treating compound fractures with all the difficulties thereunto appertaining, but has the much simpler task of the treatment of a simple fracture.

The reader may interpose to say that the statistics I have given are those appertaining only to soft part wounds, and the infection of bones is another and far more difficult proposition. That is not the case; the figures given are taken from the injuries to bones as well as of the soft parts. Indeed, the infection of bones is generally secondary to the infection of soft parts. Therefore it follows that, if by primary or delayed primary suture this infection can be stopped or removed, the bone will not become infected.

In the statistics given by Lemetre (Table 1), in a series of 421 compound fractures of all bones, among which there are fifty-one compound fractures of the humerus and twenty-six of the femur, the most difficult of all war wounds to treat and the ones which formerly gave the highest mortality, there is a complete cure with a simple fracture of 91 per cent.; and, if we add the partial failures which do not affect the treatment of the fractures, we have 97 per cent. of cures, better than that for soft part wounds.

Again, according to Gross (Table 2), there were 213 infected compound fractures treated by primary suture. These were changed into aseptic simple fractures in 89 per cent. of the cases; and so I might quote other authorities whose statistics bear out these wonderful results.

TABLE 2.—PRIMARY SUTURES OF BONE FRACTURES (GROSS)

	Total	Incomplete	Oblique	Comminuted
Skull	27	..	..	..
Inferior maxillary	9	5	..	4
Clavicle	4	1	..	3
Scapula	16	12	..	4
Clavicle and scapula	3	..	..	3
Ribs	9	..	1	8
Sternum	2	2	..	..
Vertebrae	6	6	..	..
Shoulder	6	1	..	5
Humerus	11	5	1	5
Elbow	8	3	..	5
Forearm: Both bones	..	..	..	4
Forearm: Radius	11	..	..	3
Forearm: Ulna	..	..	..	4
Carpus	4	..	..	4
Metacarpus	8	..	..	8
Hand	11	11	..	..
Sacrum and coccyx	4	4	..	..
Femur	10	6	3	1
Knee	16	14	..	2
Patella	3	..	..	3
Leg: Both bones	2	..	..	2
Leg: Tibia	19	13	2	4
Leg: Fibula	6	..	1	5
Tarsus, Metatarsus	14	..	..	..

The rules of the game have, therefore, been laid out for use by the application of this scientific knowledge, by combination of the surgeon, the roentgenologist and the bacteriologist. As Médecin-Principal Duguet has said, "Thus the old formula which subordinates the surgical act to the preestablished sanitary formation finds itself reversed." Today, it is the sanitary organization in its entirety that conforms and adapts itself to the exigencies of modern surgical technic. All compound fractures must be operated on by the technic of primary or delayed primary suture, within eight or ten hours of the casualty. Thus the problem is one of the treatment of the simple fracture.

The transportation of the wounded must be accomplished with this end in view. Hospitals of sufficient

size must be located in the zone of the advance near enough to make this transportation possible.

Each hospital must be adequately staffed with surgeons of sufficient skill, with a bacteriologist and roentgenologist, in constant consultation for the proper carrying out of this technic.

INFLUENZAL SINUS DISEASE AND ITS RELATION TO EPIDEMIC INFLUENZA *

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A typical attack of influenza usually begins as a rhinitis and spreads from the nasal mucosa throughout the respiratory tract. As the chief symptoms are produced by the involvement of the bronchial tree, attention is naturally directed to the lungs and bronchi as the most important foci for the infection. However, in studying acute cases one is often impressed by the fact that the severity of the disease, best evidenced by the general prostration of the patient, is out of all proportion to the physical signs. Tracheobronchitis with abundant mucopurulent sputum, a particularly distressing and often spasmodic cough, and moist râles uniformly present in both lungs, almost exhaust the positive findings for the respiratory tract. It becomes difficult to understand why a vigorous, previously healthy young adult, should succumb to an infection which in many cases appears to be almost wholly confined to the tracheobronchial mucosae. It might even be questioned whether such an individual should die from a *primary* bronchitis and bronchopneumonia. In the opinion of many clinicians and pathologists, such a combination is rather rare.

Because of these considerations and because of a series of observations made on soldiers of the American Expeditionary Forces, it has seemed desirable to suggest that in addition to the infection of the respiratory tract per se, other lesions, almost uniformly neglected by writers on the subject and rarely noted by clinicians or pathologists, may prove to be very seriously important factors both in the clinical picture and in the often fatal outcome of the disease.

My attention was first directed to the serious nature of so-called "influenzal purulent bronchitis," by a visit in October, 1917, to the base hospital zone of the British Expeditionary Forces in France, at which time Captain Rolland of the Royal Army Medical Corps mentioned his observations in a series of cases of this disease, which had occurred in epidemic proportions and which was highly fatal. The influenza bacillus seemed without doubt to be the causal agent, though pneumococci and streptococci were often also isolated.

On the advent of cold, wet weather in the American Army zone, severe attacks of bronchitis assumed almost the nature of an epidemic and showed a rather high percentage of fatal cases. On examination of these cases postmortem, one was at once struck by the pathologic syndrome presented, which strongly suggested infection by *B. influenzae*. This suspicion was subsequently confirmed by bacteriologic examination.[1]

It is not my purpose at this time to discuss either the general pathologic or bacteriologic characters of this series of cases. It is the involvement of the sinuses at the base of the skull that deserves especial consideration, and because of the importance of this complication, as well as its apparent frequency and the relatively small amount of attention devoted to the subject in medical literature, this separate communication is considered justifiable.

Infection of the accessory sinuses of the nose and skull have often been noted. As early as 1837, Petrequin[2] stated that frontal sinus involvement produced the headache so often present in the disease. Brochin,[3] in 1884, distinguished the "cephalic" form of influenza by localizations in the nasal fossae, and the frontal and maxillary sinuses. Pfeiffer,[4] however, in his classic descriptions of the etiology and pathology of influenza, does not mention the sinuses. In the same year (1892), Weichselbaum[5] published the necropsy findings of a series of cases, in six of which he found inflammatory lesions in either the ethmoids or the antrum. In two of these cases the influenza bacillus was recovered from the exudate. Bull[6] has also described sinus involvement as a part of the sequelae of influenza. Wassermann,[7] in a fairly complete study of clinical cases and necropsy material, while confirming Pfeiffer's results, evidently did not encounter or missed the significance of any sinus complications. In a review of the entire subject of influenza, Schrötter[8] also fails to note the relation of the sinuses to pulmonary types of the disease.

In the more recent literature there are occasional references to sinus influenza, notably by Kyle[9] and Coates;[10] but Hübschmann,[11] in a study of 110 cases, and Hammond, Rolland and Shore,[12] in an article based on seventy-one necropsies on patients showing purulent bronchitis, do not discuss at all the question of the sinuses. In short, sinus disease in epidemics of influenza is either totally disregarded or described as an accidental complication or sequela of the infection of the pulmonary tract.

When, therefore, our first fatal case of influenzal tracheobronchitis and bronchopneumonia showed, at postmortem examination, an empyema of both sphenoid cavities, and the pus from these revealed by both smears and cultures typical influenza bacilli, the condition was regarded as an interesting but unusual complication. However, as case after case coming to necropsy showed similar or comparable lesions, the circumstances warranted more careful and detailed study.

The conditions found may best be summarized from the abridged notes of the necropsy examinations.

CASE 1.—J. D., aged 22. Duration of illness, sixteen days.

Lungs: Typical purulent tracheobronchitis and bronchopneumonia.

Sinuses: Sphenoidal sinus completely filled with a thick mucopurulent exudate under some pressure. Mucosae markedly swollen and deeply congested. Posterior ethmoids

* From the Central Medical Department Laboratory, A. E. F.

1. For the larger part of the bacteriologic results in these cases, I am indebted to the careful, thorough work of Lieut. J. G. Hopkins, M. R. C. His painstaking labors, carried out under the most trying conditions, deserve more than passing mention.

2. Petrequin: Gaz. méd. de Paris, cited by Brochin (Note 3).

3. Brochin: La grippe, Dictionnaire encyclopédique des sciences médicales, 1884.

4. Pfeiffer: Vorlaufige Mitteilungen über den Erreger der Influenza, Deutsch. med. Wchnschr., 1892, No. 2, p. 28; Die Aetiologie der Influenza, Ztschr. f. Hyg. u. Infectionskr., 1892, **13**.

5. Weichselbaum: Beitrag zur Aetiologie und pathologische Anatomie der Influenza, Wien. klin. Wchnschr., 1892, p. 459.

6. Bull: Multiple Sinus Disease Following Influenza, Med. Rec., New York, 1899, **56**, 336.

7. Wassermann: Einige Beiträge zur Pathologie der Influenza, Deutsch. med. Wchnschr., 1900, No. 28.

8. Schrötter: In Kolle und Wassermann's Hand Book.

9. Kyle: Epidemic Nasal Sinus Disease, Jour. Laryngol., Rhinol. and Otol., 1917, **30**, 366.

10. Coates: Etiology and Diagnosis of Diseases of the Accessory Sinuses Following Influenza.

11. Hübschmann: Ueber Influenza, München. med. Wchnschr., 1915, **62**, 1073.

12. Hammond, Rolland and Shore: Purulent Bronchitis, Lancet, London, 1917, **2**, 41.

contained small amount of thin, yellowish fluid. Anterior ethmoids and frontals free.

Bacteria: Influenza bacilli recovered from sphenoidal sinus, lung and liver. Occasional gram-positive cocci in pairs and short chains also present.

Case 2.—C. M., aged 23. Duration of illness, 23 days.

Lungs: Typical purulent tracheobronchitis and bronchopneumonia.

Sinuses: Left sphenoid filled by thick mucopurulent exudate under pressure. Both posterior ethmoids contained moderate amounts of pus. Mucosae swollen and reddened. Other sinuses free.

Bacteria: Cultures revealed *B. influenzae* in ethmoid, lung, bronchi and liver. Streptococcus also found in bronchus but not in ethmoid.

Case 3.—M. C., aged 27. Duration of illness, twenty-six days.

Lungs: Purulent tracheobronchitis and bronchopneumonia. Mucosae swollen.

Sinuses: Both sphenoids and posterior ethmoids full of thick, mucopurulent exudate. Mucosae swollen. Anterior ethmoids and frontals apparently clear.

Bacteria: *B. influenzae* recovered in pure culture from the sphenoidal pus and the lung, and in mixed culture from bronchi, spleen, liver and bronchial lymph nodes.

Case 4.—L. S., aged 23. Duration of illness, thirty-two days.

Lungs: Purulent tracheobronchitis and bronchopneumonia with fibrinopurulent pleuritis.

Sinuses: Sphenoidal, posterior ethmoidal and frontal sinuses filled with thick mucopurulent exudate. Mucosae swollen and reddened. Anterior ethmoids free but mucosae swollen.

Bacteria: Influenza bacilli from frontal, sphenoid, bronchus, lung and liver Pneumococci also in sphenoid and lung. From bronchus, practically pure culture.

Case 5.—M. H., aged 24. Duration of illness, twenty-nine days.

Lungs: Purulent tracheobronchitis, bronchopneumonia and fibrinopurulent pleuritis.

Sinuses: Mucosae of sphenoidal, ethmoidal and frontal sinuses swollen and reddened. In left sphenoid and both frontals were a few drops of mucopurulent exudate. Other surfaces were bathed by a mucoid fluid.

Bacteria: *B. influenzae* recovered from sphenoid, ethmoid, lung, bronchus and liver. Streptococci also found in sinuses.

Case 6.—A. C., aged 22. Duration of illness, twenty-nine days.

Lungs: Purulent tracheobronchitis, bronchopneumonia and fibrinopurulent pleuritis.

Sinuses: Sphenoids contained a few drops of thin mucopurulent exudate. Other sinuses free. Middle ears and mastoids on both sides showed thick pus.

Bacteria: Influenza bacilli obtained from sphenoid, middle ear, lungs and bronchi.

Case 7.—W. H., aged 22. Duration of illness, twenty-three days.

Lungs: Purulent tracheobronchitis with bronchopneumonia and fibrinous pleuritis.

Sinuses: Sphenoids, posterior ethmoids and right frontal contained abundant mucopurulent exudate, and mucosae were markedly swollen and congested. Middle ears on both sides showed similar condition.

Bacteria: *B. influenzae* found in sphenoid (associated with streptococci and pneumococci), bronchus, pleura and middle ears.

These cases have certain features in common which distinguish them on the clinical and the pathologic side. A purulent tracheobronchitis with patches of bronchopneumonia definitely identifies them as belonging to the "pulmonary type" of influenzal lesion. However, in each instance either one or several or all the sinuses were involved in what was usually a relatively severe inflammatory process. It should be further noted that the cases all occurred in young men, the ages ranging from 22 to 27 and averaging 23. As is usual with influenza, the duration was comparatively long, averaging over three weeks (twenty-four days), and ranging from sixteen to thirty-two days.

In view of the foregoing facts, especially the long duration, the question now arises as to whether, after all, these sinus infections are not merely sequelae or unimportant complications of the principal lesion, which, it may be contended with much reason, is located in the pulmonary system. In the course of our necropsy experiences, considerable evidence accumulated having some bearing on this point.

The following cases illustrate the presence of the syndrome described above, but with the added difference that death was in all probability due to other and seemingly independent conditions:

Case 8.—R. B., aged 18. Duration of illness, eighteen days. Death due to acute general miliary tuberculosis particularly involving lungs, spleen liver and brain, and arising from an older tuberculous lesion in a seminal vesicle.

Lungs: Acute purulent tracheobronchitis.

Sinuses: Sphenoids, especially the left, filled with thick, yellowish exudate, and lined by swollen reddened mucosae. Mucosae of ethmoids and frontals thickened and moist, but free from pus.

Bacteria: Influenza bacilli from sphenoids and bronchi.

Case 9.—J. M., aged 24. Duration of illness, three days. Death due to epidemic cerebrospinal meningitis.

Lungs: Purulent tracheobronchitis, with bronchopneumonia and seropurulent pleuritis.

Sinuses: Mucosa of sphenoid swollen, but all sinuses free from demonstrable pus.

Bacteria: *B. influenzae* obtained in culture from sphenoid, lung and bronchus.

Case 10.—G. T., aged 27. Duration of illness, thirty-nine days. Death due to scarlet fever. Complicating measles with terminal seropurulent peritonitis and pericarditis.

Lungs: Acute tracheobronchitis (not purulent), with acute serofibrinopurulent pleuritis.

Sinuses: Sphenoids, ethmoids and frontals contained considerable mucopurulent exudate, and mucosae were swollen. Middle ears both showed thick pus.

Bacteria: From the sinuses and middle ears, *B. influenzae* was obtained in cultures and smears. All the other lesions yielded hemolytic streptococci.

Case 11.—F. P., aged 19. Duration of illness, fifty-three days. Death due to double empyema (pneumococcic).

Lungs: Mucopurulent tracheobronchitis.

Sinuses: Sphenoids filled with a mucopurulent exudate. Mucosae swollen but pale. Ethmoids and frontals contained a small amount of mucoid fluid.

Bacteria: Influenza bacilli obtained in mixed culture from sphenoid. No culture taken of the bronchus.

Case 12.—F. B., aged 22. Duration of illness, eleven days. Death due to empyema and pericarditis complicated by pulmonary abscesses (all streptococcic).

Lungs: Purulent tracheobronchitis (pneumococcus, Type III).

Sinuses: Sphenoids showed swollen gelatinous mucosae, and contained a thin mucopurulent fluid. Remaining sinuses appeared normal.

Bacteria: Influenza bacilli obtained by culture from sphenoid.

Case 13.—H. P., aged 18. Duration of illness, thirty-five days. Death due to double empyema (pneumococcic).

Lungs: Acute purulent bronchitis (no culture made).

Sinuses: Sphenoid sinus filled (under pressure) with thick mucopurulent exudate. Mucosae swollen but pale. Remaining sinuses free.

Bacteria: From sphenoid, *B. influenzae* obtained by culture and smears.

As has been indicated, in these six cases, death was in all probability due to some other than an influenzal infection. What the interrelation was between the various infecting organisms furnishes an interesting

speculation. That which concerns us at this time is the presence in all these cases of pathologic conditions in the sinuses in which the exudate harbored influenza bacilli that it is fair to presume were pathogenic. It must also be admitted that in some of the cases influenza organisms were possibly responsible for the conditions found in the bronchi and trachea; but certainly in these regions the pathologic processes were no further advanced than in the sinuses. It would not appear, at least, that the sinuses were necessarily secondarily or terminally invaded as compared with infection of the bronchial tree.

Further evidence is produced by two other cases in which sudden death was due to accidental causes:

CASE 14.—A. S., aged 22. Duration of life after accident, 40 minutes. Death due to bullet wound through chest, involving heart and lungs.

Lungs: Bronchi apparently normal.

Sinuses: Mucosae of sphenoids swollen; cavities contained mucoserous exudate.

Bacteria: *B. influenzae* isolated from sphenoid in pure culture.

CASE 15.—J. H., aged 30. Duration of life after accident, sixteen hours. Death due to fracture of skull and hemorrhage of brain.

Lungs: Bronchi apparently normal.

Sinuses: Left posterior ethmoid showed a few drops of thick mucopurulent exudate. Mucosae swollen and reddened. Other sinuses apparently free.

Bacteria: *B. influenzae* isolated in pure culture from this pus.

In both of these cases, with no macroscopic evidence of bronchial or tracheal involvement, definite inflammatory conditions associated with pure cultures of the influenza bacillus were found in the sinuses. Here, at least, the infection would appear to have been present in the sinuses before it became of any importance in the pulmonary tract. It might then have been a potential nidus for the future development of lung complications. Even granting that the sinus conditions were sequelae of a previous bronchitis from which the patients had recovered, the menace for recurrences and extensions would probably remain the same. After all, the question of whether the lungs or the sinuses were first affected is relatively immaterial compared to the importance of the facts themselves, namely, that the sinuses may be seriously involved in cases of influenzal bronchitis, and also that this infection of the sinuses may exist independently of any lung disease either as a consequence or a cause.

COMMENT

It would, of course, be unreasonable to assert that all cases of influenza are accompanied by sinus complications. While it is true that in only one of our cases of influenzal purulent tracheobronchitis coming to postmortem did we fail to find sinus disease also present, it is unfortunate that both in this case as well as in the others of the series the antrum of Highmore was not also investigated. However, the number of cases is altogether too small to justify any sweeping conclusions. They do serve most emphatically to emphasize the importance of the sinuses in the respiratory type of influenza.

This importance is interesting from two standpoints. First, from the standpoint of a local focus of infection, which not only constantly menaces the pulmonary system, only awaiting suitable conditions of exposure and lowered resistance for hostile invasion, but also furnishes continued sources of toxic absorption, not to mention the direct effect on the well being of the patient from the presence of these local conditions. Second, and more important, is the bearing that these local infections have on prophylaxis and treatment. When their attention had been called to the possible constant presence of sinus disease in patients suffering from influenzal bronchitis, the attending physicians adopted local measures of treatment for these conditions, even when their presence could not be diagnosed with any degree of certainty. Local applications to the nasal passages of cocain and epinephrin solutions often resulted in copious discharges of thick, mucopurulent exudate from the sinuses, with marked relief to the patient, such as amelioration of headache and pain in the eyes, as well as definite betterment of the conditions in the bronchi and trachea.

While the general proposition that young, otherwise healthy adults do not die from uncomplicated primary bronchitis or bronchopneumonia is by no means without exceptions, nevertheless, it is always extremely desirable in such cases to search most carefully for foci of infection other than the respiratory tract per se. The middle ears, serous membranes and even the blood stream may harbor the offending organisms, but in cases of influenza and possibly other respiratory diseases,[13] the sinuses of the skull should always be investigated and their freedom from involvement assured before other than general therapeutic measures of relief are abandoned.

Inevitably in these days, the question of carriers is linked up with that of actual cases, and perhaps too little consideration has been given to sinus disease as furnishing chronic foci for the spread of epidemics.

The entire subject deserves further investigation, and whether or not my conclusions are found to be justified, in the study of larger groups of cases and by other workers, is a matter of minor importance. If more careful attention is directed toward what at times is an important feature of epidemic influenza, namely, sinus involvement, this communication will have fully accomplished its purpose.

SUMMARY

1. Epidemics of respiratory influenza (purulent tracheobronchitis) have been fairly severe in both the American and the British Expeditionary Forces.

2. In the investigation of cases, both clinically and at postmortem, little attention in the past has been given to the question of accompanying sinus disease.

3. Of eight fatal cases of purulent tracheobronchitis due to the influenza bacillus, all but one showed involvement of one or more of the sinuses at the base of the skull by inflammatory processes, probably, in all cases, directly due to the invasion of these sinuses by the influenza bacillus.

4. In six patients that died from some other apparently independent infection, the sinuses showed influenzal inflammations.

5. Of two patients dying from accidentally received injuries, both harbored in their sinuses lesions giving pure cultures of *B. influenzae*.

6. Appropriate treatment of the sinuses in patients suffering from influenza often served to relieve the symptoms and apparently to hasten convalescence.

7. Investigation of the sinuses during epidemics of influenza is strongly recommended and urged not only on therapeutic but also on prophylactic grounds.

13. As, for example, whooping cough, which is very closely related to influenza both in the characters of the causative organisms, as well as many of the clinical features of the disease. The spasmodic cough of some influenza patients is often difficult to distinguish from the "whoop" caused by the Bordet-Gengou bacillus.

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SATURDAY, MAY 25, 1918

THE TREATMENT OF AMEBIASIS

The recognition of the *Endameba histolytica* as the cause of that form of dysentery known as amebic dysentery, a disease endemic in many parts of the world and liable to occur in widespread, fatal epidemics, has been helpful in many ways. The identification of the parasite and its differentiation from other organisms at times inhabiting the alimentary tract of man has made the early accurate diagnosis of the infection more easy. It has also facilitated the problems of prophylaxis and therapy by furnishing dependable information respecting the specific form of life that must be combated.

The most familiar specific therapy of amebic dysentery in recent years involves the use of ipecac and emetin. Thus, according to the Handbook of Therapy:[1]

> Whether the amebae are on the surface of the mucous membrane, deeply embedded in the ulcers, or localized elsewhere in the body, they may be reached by properly administering ipecac and emetin. The amebae on the surface of the mucous membrane are not likely to be affected by emetin administered hypodermically. On the other hand, emetin given hypodermically becomes more quickly active on the deep seated organisms and the localized lesions. . . . Happy though the results of this combination may be in treating amebiasis, the fact should not be overlooked that emetin is an amebacide and has little to do with the healing of ulcerations. Every case of amebiasis should, after this treatment, be considered one of ulcerative colitis and so treated from a dietetic point of view. At the same time every effort should be made to enhance resistance by change of climate, tonics, etc., to obviate the distressing sequelae characteristic of the disease.

Dale and Dobell[2] of the Medical Research Committee in London have lately made a somewhat rigorous test of the action of substances that already have gained or are likely to gain a therapeutic reputation in amebic dysentery. These studies have brought evidence of an unmistakable discrepancy between the action of emetin, in particular, and likewise other substances in vitro and their curative effects in dysentery. The earlier assumption on which the use of ipecac alkaloids was based attributed their favorable effect to a direct amebacidal action. Dale and Dobell found that emetin and the other alkaloids of ipecacuanha, as well as artificial derivatives, exhibited no characteristically high toxicity for the amebas, when compared with that of some other alkaloids. Methylpsychotrin, a natural alkaloid from ipecacuanha, which is more toxic for *Endameba histolytica* when tested in vitro, and much less toxic for mammals than emetin, appears to be entirely devoid of therapeutic action even when it is given in large doses.

There is clearly some other factor, Dale and Dobell conclude, in the cure of dysentery by emetin, than the alkaloid and the amebas; and that factor must be supplied by the host. The participation of the host in the process is believed to be further evidenced by their observation that emetin has no appreciable effect on the course of amebic dysentery in the cat, while it cures the disease in man, even when the same strain of amebas is present in the two hosts. It should be remembered that the *Endameba histolytica* is an obligate parasite which, unlike some other amebas that survive in the contents of the bowel, can live and multiply only by invading the tissues of its host. Perhaps, therefore, the effective drugs act by promoting some natural defensive reaction to invasion. In any event the theory of the mode of action of emetin in amebic dysentery needs reconsideration; and on its correct formulation rests in no small measure the possibility of selecting other suitable amebacides.

1. Handbook of Therapy, Ed. 4, Chicago, American Medical Association, 1915, p. 265.
2. Dale, H. H., and Dobell, C.: Experiments on the Therapeutics of Amoebic Dysentery, Jour. Pharmacol. and Exper. Therap., 1917, 10, 399.

THE HOUSEFLY IN SPRING

Why flies are both a nuisance and a menace to health scarcely needs any longer to be explained. The smallest schoolboy has been taught to look on these little insects as enemies that must be conquered. Something more than flytraps and flypaper and screens are requisite for a successful campaign. We may continue to "swat the fly" with unabated vigor for years to come; but until the life habits and reproductive phenomena of this species are clearly understood so that scientifically founded plans for the conquest of the objectionable creatures can be put into operation, progress will scarcely be demonstrable. Sanitary and medical projects have need of the entomologist in this as in various other modern problems that bear on animal welfare or human health and comfort.

Of flies it is well known that they are attracted by most forms of food and putrid substances, and that they breed where food and mediums for the deposition of eggs are available. This is particularly the case in manure. It is also realized that the temperature plays an important part in the activities of the insects. They disappear from view in cold weather. Do they persist during the winter season? Can they winter over in protected or slightly heated locations, or is the appearance of the housefly in the spring connected

with other factors? A government entomologist[1] has supplied the answer to some of these queries, not by haphazard methods but by careful observations extended over several years in the vicinity of Washington. There is no evidence whatever to show that houseflies do or can persist as adults from November to April, either outdoors, in protected stables, or in attics or heated buildings. Temperatures of from 12 to 15 F. are quickly fatal, and there is every reason to believe that any temperature below freezing is fatal if continued long enough. In heated buildings their life is not prolonged beyond that of summer at like temperature, nor is there any suspension or retardation of sexual development or activity.

If adult houseflies appear, as they sometimes do most unexpectedly in isolated instances in midwinter, it is because they represent the result of continued breeding in warm places where food and mediums for deposition exist. Many of the late forms will find their way on mild days to heated buildings. Those that do not are quickly killed. The more successful flies, Hutchison[1] reminds us, are attracted, as in summer, to odors of food, and will congregate in kitchens, dining rooms, restaurants, bakeries, animal houses, and the like. If no food is at hand they will quickly perish. When food is available, they may continue alive through December and January and even into February, if not destroyed by fungus attacks. But there are neither experiments nor observations to show that they can continue throughout the winter until temperatures are again favorable for outdoor activity and egg laying. If flies find access in the autumn to heated buildings, where both food and mediums for deposition are available, such as animal houses or restaurants in which sufficient attention is not given to the disposal of garbage or kitchen wastes, they will continue breeding throughout the winter. In such cases the flies present in March and April are the offspring, not the survivors, of those that found their way to such places the preceding autumn. Thus, Hutchison adds, it is probable that this method of overwintering is much more widespread than is now realized, especially in cities, where there must be several foci from which flies escaping on warm days in March and April survive to produce the hordes that begin to appear late in May.

In the case of the larva and pupa stages, it must be admitted that the fly can overwinter where conditions are not too rigorous. The government entomologists are uncertain as to whether overwintering in these stages or by continued breeding is the more common or more successful. The chances are that few, at most, of the larvae present in manure in the autumn can survive until the following spring. These observations show clearly that the winter months in the colder climates afford a chance to make a good beginning in the control of the fly nuisance in the following summer. It is our neglect of filth in which flies can breed that undoes the good which the fly-killing cold weather has bestowed without cost.

1. Hutchison, R. H.: Overwintering of the House Fly, Jour. Agricultural Research, 1918, **12**, 149.

THE POMELO, OR GRAPEFRUIT

Grapefruit is a popular name for the edible fruit of *Citrus decumana*, now widely used in the dietary of American households. Although the designation pomelo has been adopted in scientific circles in this country, and the fruit is termed "pomelow" by the English of Ceylon and India, the now familiar expression grapefruit, selected in recognition of the fact that the fruit commonly occurs on the trees in large clusters somewhat resembling those of grapes, is likely to be retained. The name "shaddock," which was likewise employed by some a few decades ago, is all but abandoned now.

Although even younger persons can recall when grapefruit was comparatively rare as a component of our regimen, it is not easy to realize that the first shipments from Florida were made subsequent to 1880. As late as 1885 the fruit was described as "more showy than useful," while it was incidentally noted that the juice is rather refreshing.[1] Despite the fact that literally thousands of carloads of grapefruit are annually shipped to market now in this country, only the scantiest information about a fruit found on so many American tables is actually available in easily accessible literature. It is helpful, therefore, to find that the United States Department of Agriculture has begun to fill the gap in our knowledge with some dependable information regarding the composition of the grapefruit.[2]

The edible portion — the pulp or juice — deserves first attention from the dietetic standpoint. It contains sucrose and reducing sugars in about equal proportions, the total reaching 30 gm., or approximately 1 ounce, in a large specimen of some varieties in which this part may weigh three quarters of a pound or more. Thus a diabetic indulging in half a grapefruit may readily ingest from a quarter to half an ounce of sugar in a product in which this may be unsuspected, owing to the sour taste. The latter is due, as in the case of other citrus fruits, to citric acid, the content varying from about 2 to 6 gm. per fruit, depending on the size, variety and stage of ripeness or storage. Whereas the sugars increase during storage, the acidity decreases.

The peel or rind of the grapefruit offers not a little of interest to the chemist. The essential oils are represented by limonene, citral, pinene and alcohols. Beside the pectin there is, further, a glucosid naringin which is synonymous with the "bitter principle" of

1. Downing: Fruits and Fruit Trees in America, 1885, p. 579.
2. Zoller, H. F.: Some Constituents of the American Grapefruit (Citrus Decumana), Jour. Indust. and Engin. Chem., 1918, **10**, 364.

the fruit. Whether this compound, in particular, and other components have any pharmacologic potencies remains to be ascertained. Nevertheless, therapeutic efficacy has been ascribed to the pomelo by more than one writer. Evidently the bitterness has suggested the potency of quinin or a similar alkaloid; hence the assurance that "a cool, juicy pomelo before breakfast is one of the pleasantest and surest antidotes imaginable for malaria." It is stated that subtropical or tropical countries are prone to offer grapefruit or similar citrus fruits as a safeguard against malaria, and publications from these sources contain similar advice.

We may well enjoy the luscious grapefruit, content with its small modicum of nutriment and large share of pleasures of the palate. The juice fruits are not selected primarily for their supply of calories. They have other compensating virtues which put them in the class of acceptable dietary accessories. One need merely recall the antiscorbutic properties of the orange — and possibly of citrus fruits in general. The government expert has sounded the proper note of warning in these words: [2]

> The dailies and periodicals of promoters in citrus fruit sections abound in attractive quackery on the beneficent medicinal properties of all citrus fruits, and especially grapefruit. This remedial property is being assigned to everything present in the fruits—the "alkaloids" said to be present, the citric acid, the potassium phosphate in the pulp, and the oils in the peel. If it is upon the oil present that we must depend for this elixir, then a tablespoonful of pure gum-turpentine will furnish the same amount of remedial as an entire crate of citrus fruit, providing we eat the peel and all. If it is due to the phosphoric acid as phosphate, as Dygert would have us believe, then a glass of cow's milk would be equivalent to a dozen grapefruit in this life-giving entity. If it is due to the alkaloids present in the citrus fruits, then they have no therapeutic value, for no alkaloid has been detected in any of the citrus fruits regularly marketed in this country, and it is not likely that an alkaloid exists in any of the citrus family.

ABSORPTION THROUGH THE VAGINA

It has long been established that the sound skin is practically impermeable for watery solutions of salts and other substances. For this reason, perhaps, it has become customary to think of other surfaces closely connected with the integument as being similarly impervious to soluble products that come into contact with them. Yet everyday experience in ophthalmologic practice bears witness to the permeability of the epithelial membranes of the eyes to the drugs used in dilating the pupil for purposes of examination of these organs. Furthermore, the history of toxicology shows clearly that another structure — the vagina — which resembles the skin in many respects, except for the absence of the horny surface as its outer layer of stratified epithelium, can also be the seat of active absorption. Nevertheless, as Macht[1] has pointed out in an elaborate study of the vagina as a seat of absorption, the vagina is generally regarded as an organ incapable of absorbing pharmacologic agents. Witness to this widespread belief, he says, is the universal and indiscriminate employment by women of all kinds of medicaments — some known to be innocuous and others recognized otherwise as violent poisons — in the form of douches, tampons, suppositories, "uterine wafers," and the like.

The numbers of cases of serious intoxication due to the introduction of mercuric chlorid in solution into the vagina seems to be increasing. Clinical literature gives instances of various other harmful substances that have found their way into the organism through the vaginal membrane in sufficient amounts to give evidence of their absorption. Arsenic, zinc sulphate, iodoform, belladonna and phenol (carbolic acid) are included in the list. The excuse for these facts may perhaps be found in the still prevalent opinion that drugs applied to the vagina exert only a local effect, and cannot penetrate further into the system. Only on such a hypothesis could the almost indiscriminate employment of vaginal douches containing potent substances have been tolerated or acquiesced in, and local treatments with solutions of drugs complacently adopted by so many physicians in the past. When an untoward result has been observed, it has usually been attributed to an escape of fluid into the uterine cavity; but, according to Macht, a review of the literature reveals the fact that in many of the authentic cases described this explanation must now be abandoned in favor of absorption through the vagina.

The situation that prevails lends much significance to Macht's latest experiments in this field. From these it appears that all kinds of pharmacologic agents — alkaloids, inorganic salts, esters and antiseptics — can be absorbed with comparative ease through the vaginal walls. Macht points out that, from a therapeutic point of view, drugs such as opium or belladonna may be rationally administered for their constitutional effects through the vaginal route when suitable circumstances arise. But probably a greater emphasis needs to be placed at present on the danger that centers in the careless employment of poisonous substances that may find entrance to the organism in this hitherto unsuspected way. It is not unlikely that, in view of the widespread use of douches, etc., occasional chronic intoxications of unexplained origin may find their explanation in the absorption of the harmful substance through contact with the vagina.

1. Macht, D. I.: On the Absorption of Drugs and Poisons Through the Vagina, Jour. Pharmacol. and Exper. Therap., 1918, 10, 509.

War and the Sciences.—In spite of the fallacy of the German philosophers, they have, nevertheless, established in the German people action patterns of such surpassing strength that in the organized intelligence of the German people is our greatest menace. In fact, the present war is a contest of ideas rather than of men. In its broad sense it is the practical application of physics, chemistry and biology in a mass struggle for the existence of nations.—G. W. Crile, M.D., *Pennsylvania Medical Journal.*

Current Comment

ONE NON-ESSENTIAL INDUSTRY

The question as to what constitutes a non-essential industry in war time cannot be answered offhand. The complexities of modern business are such as to make it extremely difficult to determine just what industries should be suspended under the stress of war conditions without inflicting a greater economic injury than is justified by the possible benefits that might accrue. There is one business, however, that those who have given the problem any study would have to admit should be largely dispensed with during the war — and might properly be largely dispensed with at all times — and that is the manufacture of nostrums. Every physician and every druggist knows that there is not a "patent medicine" on the market today whose place is not better filled by official products that are found on the shelves of every druggist in the country. Every physician and every druggist knows that the "patent medicine" maker aims, not to furnish drug products that can be obtained in no other form, but to duplicate in infinite variety, with secret mixtures, the non-secret preparations already on the druggists' shelves and, what is far worse, to stimulate unnecessary self-drugging on the part of the public. It is true that, if the "patent medicine" industry were destroyed, druggists would for awhile suffer financial loss, not because they derive a large profit from "patent medicines," but because the public, being deprived of the lying scare-heads of "patent medicine" advertisements, would buy fewer drugs of every kind. Certainly, however, this loss to some thousands of druggists would be an immeasurable gain to some millions of people. The exploiters of a widely heralded nostrum have bragged in their advertisements of the number of carloads of their mischievous alcoholic mixture that they have shipped to certain points. Does even the intelligent layman believe that under present conditions there is any excuse for taking up valuable shipping space with such worthless, if not dangerous, trash? And this is but one of scores. If there is one industry in the United States whose suspension at the present time is justified on the grounds of public health, greater efficiency and avoidance of waste, it is the nostrum industry.

THE MEDICAL DEPARTMENT AND THE GENERAL STAFF

The General Staff of the Army is the most important body connected with the prosecution of the war. One of the vital phases of the war is the physical condition — the health — of the soldier. It is an anachronism, therefore, that the Surgeon-General of the Army is not included in the General Staff. A recent issue of the Army and Navy Register reproduces a photograph of the Navy War Council in session; prominent among its members is the Surgeon-General of the Navy, Admiral Braisted. Somehow the Navy seems to set the pace for the Army in constructive legislation relative to medical administration; somehow the Medical Department of the Army seems to be regarded as of minor importance. Why, we do not know. Elsewhere in this issue we print the text of a bill recently introduced into the House of Representatives by Mr. Hicks to remedy the present condition. It is to be regretted that this bill includes anything more than this first section:

"That hereafter the Surgeon-General of the Army shall be a member of the General Staff Corps, and that the number of officers of the General Staff now authorized by law be increased accordingly."

Certainly there can be no reasonable opposition to this particular part of the Hicks' bill.

THE NEW YORK HEALTH DEPARTMENT

In referring to the reactionary forces in New York that seemed to be making a political football of that city's Health Department, THE JOURNAL called attention to the fact that the efficient work of two of the bureaus of the New York Health Department had interfered with the malignant activities of certain interests. These were the Bureau of Public Health Education, headed by Dr. Charles F. Bolduan, and the Bureau of Food and Drugs, under the direction of Lucius P. Brown. Dr. Bolduan has persistently fought quackery and the nostrum menace and given the New York public many interesting facts regarding these insidious evils. The bureau headed by Mr. Brown had made it interesting for the sophisticators of foods and drugs. Since THE JOURNAL commented on the New York situation, Dr. Bolduan has been let out while Mr. Brown has been suspended! Significant, isn't it?

METABOLISM IN GOUT

The fact that the treatment of gout is very unsatisfactory and that the disease is notably intractable furnishes an added stimulus to the study of its phenomena and their presumable causes. Lusk[1] has remarked, in discussing this baffling disease, that just as the whole trouble in diabetes turns on the ability of the organism to destroy sugar, so the symptoms manifested in gout are dependent on the deposit of acid urate of sodium in certain localities. But analogies may be misleading in science. In diabetes there is an undeniable upset in the metabolism of the carbohydrates, and at certain stages doubtless also a perversion in the transformations or oxidations of other foodstuffs, notably the fats. Are we to infer that gout is a disease of metabolism in a similar sense? This question has often been asked with respect to the behavior of the purin compounds, the precursors of uric acid in metabolism. One by one the props to the older structures of the theories of the gouty diathesis have been taken away by the disclosures of experimental investigation. Gout is not due to an increased formation of uric acid, as was once believed; nor is there any evidence that the accumulation of this substance is due to a diminished destruction. Gradually attention has been focused on a change in

1. Lusk, Graham: Elements of the Science of Nutrition, Philadelphia, 1917, p. 544.

the renal functions in gout.[2] But the question of some fundamental upset in metabolism always reasserts itself, despite the accumulated evidence that, aside from possibilities of the now denied altered metabolism of the purins, the general chemical exchanges in the body are the same in gout as in health.[3] The latest investigation, a study of the heat production of gouty persons as calculated from their oxygen consumption, shows anew that the basal metabolism falls within normal limits. Purin-yielding foods produce no change in intermediary metabolism sufficient to be detected by the method of indirect calorimetry. These observations, made by Wentworth and McClure[4] in the medical clinic of the Peter Bent Brigham Hospital, Boston, cannot exclude disturbances in "some minor phase of intermediary metabolism produced by nucleinrich foods"; but if such exist they are surely too slight to affect the basal metabolism of persons subject to gout.

THE ACTUALITY OF COLD STORAGE IN THE FOOD SITUATION

The world war has taught us to revise our judgment on many subjects, notably in respect to foods and their distribution. Never before has this nation realized so clearly that the important staple perishable foods produced as articles of commerce must be preserved in the season of production and plenty, and carried over through the winter period by some suitable plan of conservation. Desiccation and canning have received a new impetus; old practices have been restored and new ones devised in the attempt to save and prevent the spoiling of what is perishable. The stigma has been removed from many products and procedures which in the immediate past have been obliged to contend with the prejudice of conservatism or the reaction against novelty. The cold storage process has thus succeeded in winning a better understanding for itself, so that refrigeration plants have come to occupy a recognized place in the food conservation plans. Part of the confusion about them lies in the misunderstanding of their proper uses. A cold storage warehouse "shall mean any place artificially or mechanically cooled to or below a temperature of 45 degrees above zero Fahrenheit, in which food products are placed and held for thirty days or more." The waste of fruits and vegetables cannot be prevented satisfactorily by application of cold storage, except in the case of a very few products, such as apples, pears and perhaps potatoes and onions. Nevertheless, the industry is not idle. Some conception of its capabilities is furnished by recently compiled data.[5] The combined total cold storage and packing house capacity now available or immediately proposed is nearly 500,000,000 cubic feet. To cite a few conspicuous items, this includes more than 100 million pounds of butter, nearly 800 million pounds of cheese, 7 million cases of eggs, 5 million barrels of apples, and more than 100 million pounds of poultry, without mention of the stores of meats of many varieties. In the case of meat, butter, lard, eggs, cheese and apples alone, the value of the products stored presumably far exceeds $200,000,000.

POSSIBLE HEREDITY IN BRAIN CONVOLUTIONAL PATTERNS

The study of heredity has thrown a flood of light on the inheritance of peculiarities that characterize individuals and produce certain types of resemblances between relatives. Recurrences of form and stature, color and skin patterns, psychologic similarities and even chemical oddities of metabolism like cystinuria and alkaptonuria have been shown to fall within the schemes of explanation developed by students of genetics, and particularly as a result of experimental investigations of mendelian problems. Blue eyes and red hair and polydactylism have become amenable to interpretation in accord with established "laws of heredity." The internal organs have not yet been subjected to equally intensive research in the light of these newer generalizations. Recently, however, Sano[1] has directed attention to the possibility of hereditary resemblance in the study of the convolutional patterns of human brains, at the London County Asylums. The seeming intricacies of the convolutions and fissures of the cerebrum almost bar an adequate analysis of a problem thus complex. Nevertheless, a control of comparisons with nonrelative brains has enabled Sano to assert that the brains of relatives — brothers, parents and children — are more like one another than those of nonrelatives. This appears to be particularly true when, as in negro or other races, the types are less mixed than is the case among most British subjects. What such studies of pattern in organs may lead to no one can conjecture at present.

THE BLOT ON THE ESCUTCHEON

A reminiscent article, prompted by the death of a "patent medicine" millionaire, recently appeared in a metropolitan paper. Generalizing on the ultimate distribution of the wealth made in the nostrum business the writer says:

> The dispersal of many large fortunes accumulated in the making of pills and "cures" rarely attracts attention. The beneficiaries generally strive to hide the sources of their enrichment. A dozen cases might be mentioned of Philadelphia, Providence, Newport, and New York families whose money came from such sources, but whose members of this generation studiously avoid mention of the fact.

Well, one can hardly blame them!

1. Sano, F.: Morphological Investigations Upon the Convolutional Pattern of Relative Brains in Man, Proc. Roy. Soc. Med., 1917, **10**, Sec. of Psychiatry, p. 21.

2. McClure, C. W.: The Renal Function in Gout, Arch. Int. Med., November, 1917, p. 641. The Renal Function and Gout, editorial, THE JOURNAL A. M. A., Jan. 5, 1918, p. 28.

3. Magnus-Levy, A.: Berl. klin. Wchnschr., 1896, **33**, 416; Ztschr. f. klin. Med., 1899, **36**, 353.

4. Wentworth, J. A., and McClure, C. W.: Studies on the Metabolism in Gout, Arch. Int. Med., January, 1918, p. 84.

5. Horne, F. A.: Cold Storage—Its Capabilities and How to Best Utilize and Extend Them, Am. Jour. Public Health, 1918, **8**, 223.

Disease Prevention.—Surely our philanthropists should find as much pay in preventing misery as they do in relieving it. Preventive medicine is the watchword of the hour, and enlistment in the cause can come only through education.—M. J. Rosenau.

Association News

TWO IMPORTANT SPECIAL MEETINGS AT THE CHICAGO SESSION OF THE AMERICAN MEDICAL ASSOCIATION

Examination of Registrants—Rehabilitation of the Disabled Soldiers

The medical profession is particularly concerned with two points in the life of the soldier—one, when he enters the Army; the other, when, physically disabled, he is no longer a fighting unit. A careful selection of recruits protects the government—which means the people—against admission to the Army of men not physically fit—men who probably would become a source of expense as long as they live. When the soldier is disabled it becomes the duty of the government to restore him as nearly as possible to perfect physical condition, and to do all that is possible to fit him to fill a position in life that will not make him dependent on others for support.

THE EXAMINATION OF RECRUITS

Two important special meetings in connection with the annual session of the American Medical Association next month will be devoted to these phases of the soldier's life. The first subject will be considered on Thursday afternoon and Friday, in meetings held at the Studebaker Theater. The importance of these meetings to physicians will be appreciated when it is realized that there are between 23,000 and 25,000 physicians connected with the examination of registrants.[1] The opening meeting will be addressed by a representative from the Provost Marshal-General's Office, by some one representing the local boards, the advisory boards, by a layman to present the public's view, and by an Army medical officer representing those concerned with the final examination of recruits. The aides to the governors of the various states will be present by order of the Provost Marshal-General. At 8:30 to 10 o'clock Friday morning a meeting of the state aids will be held. The rest of the day will be devoted to a conference of all physicians engaged in the examination of registrants on various problems connected with the work, and to an explanation of the new regulations which will be ready for distribution at that time.

RECONSTRUCTION AND REHABILITATION

The meeting on reconstruction and rehabilitation of the disabled soldiers, arranged for all day Thursday at the Auditorium Theater, as was announced week before last, will consider the various phases of this timely subject—the national program; the experience of foreign countries; the transportation from overseas; reconstruction of the special senses; reclamation of the industrial workers; vocational training—in fact, every aspect of the subject will be considered by special workers and by students of the subject.

Both of these special sessions should be—and undoubtedly will be—largely attended.

THE CHICAGO SESSION

Meetings of the House of Delegates

The House of Delegates will hold its meetings during the coming annual session in the library at the headquarters of the Association, 535 North Dearborn Street. The first meeting will convene at 10 o'clock Monday morning, June 10, continuing in the afternoon. On Monday and on Tuesday, arrangements are made for the House to recess between 12:30 and 2 o'clock, when luncheon will be provided at the Hotel Virginia for the members of the House. On Monday evening the members of the House will be the guests of the Chicago Medical Society at the Hotel La Salle where a buffet supper will be served to be followed by a smoker.

1. There are 156 district boards, 4,643 local boards, and 1,320 medical advisory boards. It is estimated that there are 15,000 physicians connected with the local and district boards. This estimate includes not only the medical members, but also the medical consultants and medical assistants utilized by the medical men on the boards. The number of members of advisory boards is approximately 9,500.

Entertainment for Women Guests

Mrs. Albert J. Ochsner, chairman of the Committee on Women's Entertainment, announces the following entertainments for the wives of physicians and other women guests in attendance at the annual session:

TUESDAY AFTERNOON, JUNE 11, informal "at home" at the Chicago Woman's Club under the auspices of the president of the Woman's Club and the Committee on Women's Entertainment.

WEDNESDAY AFTERNOON, JUNE 12, a "tea" at the South Shore Club from 2 to 5 p. m. At this entertainment there will be an excellent musical program.

THURSDAY AFTERNOON, JUNE 13, reception at the Art Institute.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending May 17, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 869, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors, and 395 lieutenants.

MEDICAL RESERVE CORPS: 18,951, including 1,320 majors, 4,794 captains and 12,837 lieutenants. On active duty: 16,926, including 1,229 majors, 4,462 captains and 11,235 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,202, including 20 lieutenant-colonels, 244 majors, 151 captains and 787 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 125, including 3 brigadier-generals, 14 colonels, 100 lieutenant-colonels and 8 majors.

DENTAL CORPS, 209; DENTAL RESERVE CORPS, 5,275, of whom 1,518 are on active duty; DENTAL CORPS, N. G., 257; VETERINARY CORPS, 17; VETERINARY RESERVE CORPS, 1,443, of whom 733 are on active duty; VETERINARY CORPS, N. G., 40; VETERINARY CORPS, N. A., 496; SANITARY CORPS, 1,095, and AMBULANCE SERVICE, 162, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

	Number				
Causes	M.R.C.	M.C.N.G.	D.R.C.	D.C.N.G.	San.C.
Physical disability	659	52	13	8	7
Inaptitude	250	20	5	0	2
Other branches of service	499	70	26	8	61
Resigned	114	33	8	4	7
Domestic troubles	60	0	0	0	1
Needed by community	49	0	0	0	0
Deaths	71	4	3	0	1
Dismissed	8	2	1	0	0
Duty completed	2	0	0	0	0
No reason given	14	0	1	0	0
	1,726	181	57	20	79

General Hospital Bulletin

The initial copy of "The Bulletin of the U. S. Army General Hospital No. 2" of Fort McHenry, Md., has just been received. This bulletin is to be issued monthly and is published by, and primarily for the benefit of, the medical and administrative staffs of the hospital, for a three-fold purpose: 1. To present such items of interest as administration at the hospital, important army orders of a public nature, legislation and personal notes; 2. to report cases of especial interest; 3. to be a permanent historical record of one of the largest government general hospitals which is built on the spot which is the birthplace of the national anthem. It is also aimed through the medium of this bulletin to bring about a closer cooperation of the staff of officers.

Interchange of War Prisoners

The *Riforma Medica* relates that the surgeon-general of the Swiss army has finally succeeded in arranging for the interchange between Germany and France of prisoners over 48 years old who have been in captivity for at least eighteen months. The officers in this group are to be interned in Switzerland, and the others repatriated. The commission that selects these prisoners for exchange is composed of three Swiss physicians and three physicians of the nation holding the men prisoners. The incurable and the tuberculous are also listed for repatriation and injury from an accident while at work is accepted as the equivalent for a war-injury. Holland, after a year of overcoming difficulties, is said to have about completed similar arrangements for British and Teuton prisoners. There are about 8,000 German

and the same number of British prisoners who will benefit by this interchange. In Italy the repatriating trains of the disabled arrive monthly. The last brought back to Italy 350 disabled soldiers and eighty officers. Besides this, there is also a weekly repatriating train of sick prisoners who are taken charge of by the Italian Red Cross as they cross the border.

Medical Students Exempted from the New Draft

Senate Joint Resolution No. 124 provides that medical students in bona fide attendance at recognized medical schools shall be exempt from draft under the Selective Service Law of May 18, 1917. The resolution has passed both houses of Congress and presumably will receive the approval of the President. Medical students who have attained the age of 21 years since June 5, 1917, and on or before June 5, 1918, the day set for registration by proclamation of the President; will, like all other men of the same age period, be required to register; the time and manner of claiming exemption will be defined hereafter.

No medical student entering college after the approval of the resolution is entitled to exemption. Any student entitled to exemption loses that right as soon as he ceases to be a medical student in a recognized medical school, whether his status as a student is terminated by the interruption of his medical course or by graduation.

Students of dentistry are granted no exemption by the resolution.

A Bill to Increase the Efficiency of the Army Medical Service

A clear-cut statement of the principal needs of the Army Medical Service, and a succinct and well-defined plan to meet them, are embodied in a bill introduced into the House of Representatives on May 16, by Mr. Hicks. The bill, entitled A Bill providing that the Surgeon-General shall be a member of the General Staff Corps, and for other purposes, H. R. 12,141, was referred to the Committe on Military Affairs. It is as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter the Surgeon-General of the Army shall be a member of the General Staff Corps, and that the number of officers of the General Staff now authorized by law be increased accordingly.

SEC. 2. That the Secretary of War shall take such measures as will fix the responsibility for sanitary defects upon the proper commanding officers.

SEC. 3. That no permanent camp, cantonment, post, or station which is to be occupied by troops be established unless its selection has been duly considered and formally reported upon by the Medical Department.

SEC. 4. That when a state of war exists the transportation necessary to transport medical and hospital supplies of all kinds, and the sick and wounded of the Army, whether by land or water, shall be under the exclusive control of the Medical Corps.

SEC. 5. That hereafter the commissioned officers of the Medical Corps and of the Medical Reserve Corps of the United States Army on active duty shall be distributed in the several grades in the same ratios heretofore established by law in the Medical Corps of the United States Navy.

The Surgeon-General shall have authority to designate as "consultants" officers of either corps and relieve them as the interests of the service may require.

"WHY IS MY SOLDIER SICK"

Antivivisectionists, Misrepresentation Exposed

(Dr. Keen to the Secretary of War)

Hon. Newton D. Baker,
Secretary of War,
War Department, Washington, D. C.

My Dear Mr. Secretary:

In a four page pamphlet entitled "Why Is My Soldier Sick?" issued by the National Antivivisection Federation, incorporated, with headquarters at 456 Fourth Avenue, New York City, are published two resolutions passed by the New York Antivivisection Society at its annual meeting, Jan. 31, 1918, and forwarded to you officially. The second resolution reads as follows:

Be it further Resolved, That a copy of the foregoing resolution be forwarded to the Secretary of War as our official protest against the medical department's claim that serum inoculation is a necessary war measure and for that reason made compulsory, and as our protest against compulsory inoculation when the individual soldier conscientiously objects thereto; and *we point to the provision of exemption now made by Great Britain, that power having been forced to rescind the rule of compulsion after the alarming effects of inoculation were disclosed.*[1]

It has long been a matter of common knowledge and deeply regretted by the medical profession that Great Britain has never made antityphoid vaccination compulsory, as it fortunately is in our own Army.

In an article entitled "The Red Cross and the Antivivisectionists," a copy of which I am enclosing, I have shown by irrefutable facts how extraordinary the protection of the antityphoid vaccination has been in our Army and in the British army.

Although I knew that the statement in this resolution was an absolute falsehood, I preferred to have an authority which was beyond all question. Accordingly, on Saturday, April 27, I sent the following cable to Surgeon-General Goodwin, who occupies the same post in Great Britain that General Gorgas does in this country:

Surgeon General Goodwin, War Office, London:
Has antityphoid vaccination ever been compulsory in British Army?
KEEN.

To this on Monday, April 29, I received the following reply:

London, Prof. Keen, Philadelphia:
Antityphoid inoculation has never been compulsory in British Army.
GOODWIN.

You will observe, therefore, that this is a flat contradiction of the false assertion of the New York Antivivisection Society.

Nearly all of the British army has been voluntarily vaccinated against typhoid fever. Col. F. F. Russell in Surgeon-General Gorgas' office authorizes me to say that he understands that 99 per cent. of the British soldiers are vaccinated against typhoid fever. The reason for this is that they have seen how extraordinarily complete is the protection offered by the antityphoid inoculation. At this time the fate of the war depends largely on the health of our Army. It is in my opinion equivalent to disloyalty to deprive our soldiers of this protection and sacrifice their lives instead of the lives of a few rabbits, guinea-pigs, cats and dogs.

Yours very respectfully,
W. W. KEEN.

[NOTE.—
And the parson made it his text that week and he said likewise,
That a lie which is half a truth is ever the blackest of lies,
That a lie which is all a lie may be met and fought with, outright,
But a lie which is part a truth is a harder matter to fight.
TENNYSON.]

Treatment of War Prisoners in Germany and Austria —A Russian Account

Dr. D. P. Nikolsky of Petrograd has been compiling data from the testimony of repatriated and escaped war prisoners in Germany and Austria, especially of physicians and nurses, and of commissions sent to inspect prisoners' camps. He is publishing his report in the *Russkiy Vrach*, and the first two instalments have been received. The dates of these issues are Aug. 12 and Nov. 25, 1917, pp. 468 and 562. He comments on the Germans' having revived the ancient barbarian custom of killing war prisoners or making slaves of them, and he quotes the minister of foreign affairs, Dohlbrank's, endorsement of the deputy Wohlschmidt's suggestion to "starve the war prisoners in view of the scarcity of provisions for our own German nation." The policy, Nikolsky says, "is to feed them only enough to keep them from dying of starvation and give them warmth only enough to keep them from freezing." And even this was not always done. He states that everything was taken from the captives at once, heavy coats, jackets, and shoes as well as money, watches and identification amulets, crosses, etc. In exchange they were given old worn-out things, slippers or wooden shoes. All had to submit to this plundering, officers and physicians as well as privates. Dr. Selezneff complained to the commanding officer when his watch and chain were taken, but the officer remarked to a younger officer, "He is lying."

1. Italics my own.

and told the physician that if he repeated this lie he would be given twenty-five stripes.

The prisoners were driven from the battlefield to the railroad without food, sometimes for seven or eight days. The inhabitants (Hungarians) heaped abuse on them, calling them "swine" and "dogs," throwing sticks and stones at them, striking them and kicking them, spitting in their faces and even tearing off the bandages from the wounded. Not only men but women took part in this abuse, and children, large and small. There were instances when the wounded or exhausted fell and the guards bayoneted them and threw them into the ditch. A party of prisoners taken at Brezin did not get any food for six days. Two of the captives slipped into a field to pick up partly rotten potatoes, but the convoy shot one and bayoneted the other. In some places they were offered bread and milk by Slavic or Polish residents, but the guards prevented their taking them or took the food away from the "Russian pigs." In some cases they had no food for nine days except discarded potatoes in the fields. Prisoners taken at the Mazurian lakes were given nothing to eat for seven days. When the prisoners reached the railroad station they were given alleged coffee, without sugar or milk, or a vegetable soup. Then they were herded in cattle cars, eighty or ninety men to a car in Germany, sixty or seventy to the smaller Austrian cars. They were not allowed to get out of the cars to attend to the calls of nature, and they had to make shift by using their caps, cloth torn from their shirts, etc., throwing them out of the car through the ventilating holes under the roof. "Some succeeded in dying in the car," one of the escaped prisoners tells, but the corpses were not taken out. Coffee and bread in small amounts were given after two or three days of this. When they stopped at a station, women in nurses' uniforms had provisions for the guards but none for the captives. Dr. Valuisky relates that when his train reached Naisse not even the wounded or the physicians were given anything to eat, but the women spread a feast for the convoy directly in front of the car with the wounded. Appeals for drinking water were unavailing. When some one brought a jug of water to the car, the guard pushed him away and poured out the water, saying "Nothing for the Russian swine." Such instances were common. Nikolsky quotes from a Russian paper Colonel Mislaivsky's story of the nurse spitting into a glass of water and flinging it into the face of a prisoner who had asked for water for a wounded comrade.

In the camp at Dunaserdagen the prisoners tore down the only building in the camp, the privy, and used the boards to strengthen the walls of their dugouts. But for this, the commanding officer had twenty of the prisoners shot and others bayoneted. As sickness became rife, shelters were built for the prisoners, long open sheds without walls. Finally walls were added, but, as one prisoner relates, "a sparrow could have flown through the cracks." Few had any stoves, and when there was a stove there was not enough fuel to heat it. Frozen feet and hands were common. Some of the Austrian barracks were of the actual prison type, with barred windows, no light or ventilation, and primitive arrangements in the building for latrines. In some of the camps, on the other hand, the latrines were at a long distance from the barrack and the prisoners were allowed to go to them only in platoons of ten under a guard convoy. At night, a platoon could be made up of five. Dr. Feinberg says that the latrine arrangements impressed him as the most humiliating of all his experiences. The provisions for officers and physicians were far from being any better than for the other prisoners, but their living quarters were separate.

The conditions as to the food at a number of different German and Austrian camps are described in detail. The portions were so inadequate that the men were weak from semistarvation and the guards mocked and jeered at them. Sometimes they were offered an extra portion, and when the men flocked with their dishes, the guards set the dogs on them and laughed as the dogs bit them. At the Altengrabow camp it is said that the vegetables for the soup, boiled without peeling, were not cleared of dirt and manure. The physicians had to stand in line with the other prisoners to get their vegetable soup or rare herring and potatoes dinner, but Dr. Feinberg relates that he finally secured a larger dish, and the physicians took turns, one getting the food for them all and bringing it to their quarters to eat.

Nikolsky is convinced that it is the deliberate policy of the Germans to undermine the health of the war prisoners so that when they return home they will be unfit not only for further military service but unfit even for self-support as citizens. They are set at tasks that tax the strength of the most robust, such as draining the swamps in northern Prussia and Schleswig, and doing caisson and diver work in building breakwaters in the Baltic.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending May 10, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (disease only):

	Last Week	
All Troops	1,335.5	1,109.7
National Guard Camps	917.3	994.
National Army Camps	1,659.5	1,222.4
Regular Army	1,148.2	1,054.1

2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:

All Troops	40.8	39.1
National Guard Camps	37.7	35.6
National Army Camps	46.7	43.8
Regular Army	37.	37.4

3. ANNUAL DEATH RATE 1,000 (disease only):

All Troops	5.3	6.3
National Guard Camps	2.8	3.6
National Army Camps	6.	6.3
Regular Army	5.9	8.19

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MAY 10, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal: Total	Venereal: New infections	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
Wadsworth	1	..	..	57	...	1	..	..	0	1,083.3	48.8
Hancock	..	..	..	22	..	1	..	..	0	515.2	35.8
McClellan	2	..	3	29	19	..	1	..	2	582.4	29.2
Sevier	1	..	2	38	16	..	2	..	4	983.2	29.9
Wheeler	2	..	2	22	3	..	..	..	4	997.6	34.7
Logan	8	2	..	31	20	8	1	6	1	2,105.7	68.7
Cody	9	..	..	3	..	..	..	..	0	449.3	23.6
Doniphan	..	..	..	..	..	..	..	..	..	..	..
Bowie	3	..	1	41	41	1	..	..	12	1,254.1	38.6
Sheridan	..	..	..	21	14	..	..	..	0	462.4	23.0
Shelby	1	6	1	13	..	1	..	..	2	664.5	41.7
Beauregard	9	..	13	25	3	..	..	..	2	1,935.3	60.0
Kearny	3	..	1	5	..	3	1	1	2	1,162.9	35.5
Devens	15	..	..	686	3	18	1	2	1	1,898.2	47.8
Upton	9	..	..	221	16	5	..	6	4	1,308.4	41.7
Dix	1	..	..	175	3	25	..	29	1	1,309.2	31.6
Meade	10	..	..	174	4	6	2	3	1	1,070.7	30.9
Lee	4	..	1	202	10	26	2	..	1	977.5	38.7
Jackson	23	..	2	226	5	20	1	..	1	2,771.2	66.7
Gordon	56	..	2	85	85	28	5	5	7	2,207.8	56.4
Sherman	9	..	..	19	6	12	..	10	3	1,167.3	28.7
Taylor	17	..	..	42	2	19	..	2	3	2,115.1	69.7
Custer	38	..	..	364	3	9	..	9	8	1,621.2	31.8
Grant	8	..	..	45	..	12	..	2	3	784.9	29.1
Pike	25	..	4	51	9	22	2	3	3	2,240.7	66.3
Dodge	46	..	..	97	..	36	..	6	17	1,885.3	79.5
Funston	55	..	..	38	12	13	3	4	9	1,205.1	49.4
Travis	16	..	4	164	..	5	..	..	2	3,041.5	55.1
Lewis	9	..	1	232	4	9	1	16	3	1,466.5	37.3
Northeastern Dept.	..	..	..	9	..	2	..	4	0	837.0	30.3
Eastern Dept.	3	..	..	31	10	3	..	1	5	988.6	29.6
Southeastern Dept.	1	..	4	56	10	6	1	..	1	1,058.8	31.7
Central Dept.	8	..	..	12	9	8	..	9	1	1,188.2	44.0
Southern Dept.	10	..	1	96	31	7	..	16	14	1,220.2	41.4
Western Dept.	2	2	2	18	11	10	..	5	1	854.4	24.4
Aviation S. C.	23	5	5	132	..	26	2	20	15	1,158.1	32.5
Camp Greene	1	..	1	19	19	4	..	..	0	570.4	18.8
Camp Fremont	..	1	1	12	5	14	..	..	0	866.1	36.7
El Paso	..	..	..	6	6	..	..	1	0	794.7	4.6
Columbus Bks.	..	..	..	11	..	..	..	..	0	706.5	22.2
Jefferson Bks.	7	..	..	44	4	3	..	4	0	1,503.6	60.0
Fort Logan	2	..	..	5	2	4	..	2	1	1,387.9	78.9
Fort McDowell	..	..	1	41	..	..	..	..	0	2,157.1	58.5
Fort Slocum	1	..	..	23	..	1	..	..	2	1,495.0	38.4
Fort Thomas	..	..	..	8	..	8	..	..	1	1,750.7	18.5
D. B. Alcatraz	..	..	..	..	..	..	..	..	0	330.1	6.3
D. B. Fort Leavenworth	..	..	..	2	..	..	..	..	0	1,438.2	45.9
A. A. Humphreys	8	..	..	25	..	7	..	..	0	563.5	9.2
J. F. Johnston	10	..	2	42	25	13	3	6	1	1,355.5	37.3
Hoboken, N. J.	16	..	1	245	17	13	3	10	8	1,070.4	49.9
Camp Stuart	13	1	3	107	16	17	3	1	5	1,605.8	55.8
West Point, N. Y.	..	..	..	..	..	..	..	..	0	609.1	6.3
Edgewood-Aberdeen	..	..	..	..	..	..	..	1	1	487.7	17.3
Provisional Depot for Corps and Army Troops	3	..	1	45	4	4	..	1	0	1,404.2	47.1
Camp Holabird	..	..	..	2	..	..	..	..	0	446.7	3.2
Camp Raritan	..	..	..	..	..	..	..	..	0	493.7	26.3
Springfield Armory	1	..	..	..	..	..	..	..	0	1,249.9	39.9
Natl. Guard Depts.	..	..	..	14	7	3	1	..	0	.....	.....
Natl. Army Depts.	10	..	1	216	53	24	1	11	5	.....	.....
MacArthur	..	..	..	..	..	1	..	..	1	250.1	20.2
Doniphan	5	..	..	19	..	2	1	5	1	2,883.1	97.6
Total	504	19	60	4,580	487	531	37	205	167	1,335.5	69.6

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending May 10, 1918	Regulars in U. S., Week Ending May 10, 1918	National Guard, All Camps, Week Ending May 10, 1918	National Army, All Camps, Week Ending May 10, 1918	Expeditionary Forces, Week Ending May 2, 1918
Pneumonia	20.0	13.8	8.3	31.2	23.5
Dysentery	0.7	1.1	2.1	0.0	0.7
Malaria	2.4	2.6	4.9	1.3	1.2
Venereal	182.5	123.3	59.1	270.9	85.1
Paratyphoid	0.2	0.6	0.0	0.0	0.0
Typhoid	0.1	0.3	0.0	0.0	0.2
Measles	21.1	18.6	3.2	29.8	8.5
Meningitis	1.4	1.57	1.0	1.5	2.4
Scarlet fever	8.1	10.4	1.5	9.2	8.3

NEWS OF THE CANTONMENTS

Camp Zachary Taylor, Lincoln Division (Eighty-Fourth) Louisville, Ky.

MAY 20, 1918.

MEDICAL EXAMINATIONS FOR OVERSEAS DUTY

In keeping with the plans of the War Department a board of medical officers is conducting physical examinations of soldiers for oversea duty with the idea of separating those who are fit and strong enough for foreign service from those that are just able to stay in this country for home service.

The first results of these medical boards has just been announced. Those men who have been found physically unfit for oversea service have been carefully examined by seven different boards, and finally by the general reviewing board. The order announcing the list also transfers all of the men to duty with the 159th Depot Brigade, which in army circles is considered an organization that will remain at the camp as a replacement unit for the duration of the war.

REFUSAL TO SUBMIT TO SURGERY

Two soldiers who faced a court martial at the camp for refusing to submit to a surgical operation have changed their minds and have undergone the operations and are doing nicely, according to medical officers. The two soldiers had refused to submit to the operation after a board of medical officers had decided that both should undergo the operations to better fit them for military service.

The Judge-Advocate of the Army recently ruled that where a soldier refused to take medical treatment or submit to an operation after a board had decided that it was necessary he was subject to trial by court martial. The matter has been watched closely at the camp, and staff officers declare that whenever a soldier in the future refuses either medical treatment or operation, after all military regulations are complied with, he will be tried by a general court martial.

FUNERAL EXPENSE

Recent orders from Washington state that if a soldier dies in the military service the United States shall, on written application, pay the reasonable funeral expenses, including the expense of burial and the return of the body of the deceased to his home under the condition that the sum does not exceed $100.

TRAINING IN CONVALESCENT HOSPITAL

The infirmary will be under the direct jurisdiction of Lieut.-Col. Will L. Pyles, commanding officer of the hospital, but Lieut. Sites of the One Hundred and Fifty-Ninth Depot Brigade has been designated as the officer in charge of the military instructions of the patients. The idea is to prevent as far as possible, loss of time in army training. Electric buzzers are being installed so that the patients may be taught telegraphy. They will be instructed in wigwag and semaphore signaling, receive lectures on military subjects, and those whose conditions will permit will be drilled.

The patients will be classified into four groups. The first group will consist of the resting cases. They will walk to the mess hall for meals and receive lectures. The second group will be made up of those able to take light exercise. They will go out on short walks, accompanied by medical officers. The third group will include those able to drill. The drill periods will be of short duration, probably a half hour at a time.

The fourth group will be known as the reconstruction class. Men coming into the Army through the selective draft who are found to have slight physical defects will be assigned to this section with a view of building them up so that they will be elegible for general military service. Special physical exercise will be prescribed for each individual case to meet the needs. As an illustration, a man having foot trouble will be given exercise to strengthen his feet, and a man having slight heart weakness will be given a different exercise tending to improve the heart muscles.

This system was tried out at other camps and found to be beneficial. Many recruits were reclaimed for the Army that otherwise would have been lost to the fighting forces. Good results are expected here.

PROMOTIONS

The following officers have been recommended for promotion as lieutenant-colonels: WALTER BENSEL, WEBSTER CALVIN, New York City; DAVID B. DOWNING, Detroit, Mich.; CHANNING FROTHINGHAM, Boston, Mass.; HERBERT I. HARRIS, Fort Constitution, N. H.; RUSSELL B. JONES, Pittsburgh, Pa.; STEWART R. ROBERTS, Atlanta, Ga.; CHARLES H. TAIT, Philadelphia, Pa.; RAYMOND C. TURCK, Jacksonville, Fla.

Officers of the Medical Reserve Corps Recommended for Promotion as Majors, Since March 1, 1918

HENRY ABRAHM, San Francisco, Calif.; GEORGE CUMMINGS ALBEE, South Orange, N. J.; JAMES S. ALLEN, Geneva, N. Y.; ROBERT A. ALLEN, Tacoma, Wash.; CURTIS ATKINSON, Fort Collins, Colo.; WILLIAM HUPP BALDWIN, Memphis, Tenn.; FRANK MILAN BARNS, Harrison, Neb.; RICHARD BEW, Atlantic City, N. J.; GILBERT W. BREHM, Columbus, Ohio; BENJAMIN BENTON BROWN, Muskogee, Okla.; THOMAS A. BURCHAM, Des Moines, Ia.; BURTON CHANCE, Philadelphia, Pa.; WALDEMAR A. CHRISTENSEN, Douglas, Ariz.; ELBERT CLARK, Chicago, Ill.; WILLIAM A. CLARK, Trenton, N. J.; CLARENDON J. COMBS, Oshkosh, Wis.; CLINTON W. D'ALEMBERTE, Pensacola, Fla.; THOMAS C. DAVISON, Atlanta, Ga.; FRANK DEACON, Chicago, Ill.; WALTER A. DOMER, Wabash, Ind.; LUCIUS FRANCIS DONOHOE, Bayonne, N. J.; FRANCIS J. EISEMAN, SUMNER EVERINGHAM, New York City; ALBERT MARTIN FARRELL, Two Rivers, Wis.; JAMES O. FORT, Fort Crockett, Galveston, Texas; WILLIAM, Detroit, Mich.; ALBERT P. FRANCINE, Philadelphia, Pa.; JOSEPH C. FRIEDMAN, Chicago, Ill.; EMERY C. GAFFNEY, Lincoln, Ill.; GEORGE WARREN GARDNER, Providence, R. I.; FRANK WILLIAM GOODWORTH, Worcester, Mass.; ALEXANDER LIDDELL GILLARS, Pottsville, Pa.; DANIEL J. GLOMSET, Des Moines; HARRY SEARLS GRADLE, Chicago, Ill.; ALLEN HAMILTON, Fort Wayne, Ind.; EDWARD L. HANES, Rochester, N. Y.; THEODORE H. HARRELL, Gonzales, Tex.; ARTHUR HARTLEY, Philadelphia, Pa.; WILLIAM BROWN HEAGERTY, Marengo, Minn.; WILLIAM H. HENGSTLER, Minneapolis, Minn.; HENRY WILLIAMSON HOAGLAND, Fort Douglas, Utah; CHARLES W. HUGHES, Winneconne, Wis.; WILLIAM E. KNEWSTEP, Hampton, Va.; JACOB CARL KRAFFT, Chicago, Ill.; HAROLD L. LAMB, Sauk Center, Minn.; SAMUEL LEOPOLD, Philadelphia, Pa.; JESSE D. LIPPINCOTT, Newark, N. J.; EDGAR WEBB LOOMIS, Dallas, Tex.; EZRA H. MATHEWSON, Dallas, Tex.; JESSE G. MAXON, Harvard, Ill.; GILPIN M. MCCALL, New York City; BEN MERRILL, Winthrop, Mass.; PHILIP H. MOORE, Philadelphia, Pa.; FRANK L. MORSE, Somerville, Mass.; GEORGE STEWART MURPHY, Amarillo, Texas; THOMAS E. NEIL, East Moline, Ill.; EDMUND B. OWENS, Dixon, Ill.; SIDNEY E. D. PIERCE, Fort Slocum, N. Y.; MORRIS L. POTTS, Trenton, N. J.; JOHN ALBERT RHIEL, Malvern, Ohio; EDWARD SHERRARD RIMER, Staten Island, N. Y.; LEWIS J. ROSENTHAL, Baltimore, Md.; RALPH TAYLOR SHIPLEY, Carrollton, Ohio; HARRY SILLS, St. Johns, Mich.; LORENZO DEM. SNYDER, Corning, Calif.; ALVIN E. ZENN STONER, Cumberland Valley, Pa.; ORVEL ADDISON SUTTLE, Mt. Vernon, Ill.; HENRY H. THOMPSON, Philipsburg, Pa.; CHARLES M. WILLIAMS, New York City; NORMAN E. WILLIAMSON, Stockton, Calif.; HENRY O. WYNEKEN, San Antonio, Texas.

Officers of the Medical Reserve Corps Recommended for Promotion as Captains, Since March 1, 1918

LEROY C. ABBOTT, New York City; GERALD R. ALLABEN, Rockford, Ill.; LYTTON GRAY AMENT, Victoria, Tex.; SERGE ANDROP, Richey, Mont.; NICHOLAS I. ARDAN, Bristol, Tenn.; DAVID E. ARNOLD, Kerman, Calif.; FREDERICK ARTZER, Argleo, N. J.; WILLIAM MATHEWS BANE, Denver, Colo.; CLARENCE EARL BARCUS, Indianapolis, Ind.; FRANCIS OLIVER BARRETT, El Paso Tex.; CORNELIUS BERNARD BARRY, Woonsocket, R. I.; LINDSAY WILSON BASKETT, Big Timber, Mont.; CHARLES M. BAUMAN, St. Louis, Mo.; CLYDE MCK. BECK, Memphis, Tenn.; MONTE L. BELOT, Clyde, Kansas; HUGH KING BERKLEY, San Francisco, Calif.; IVAN LESTER BIGGS, Custar, Ohio; BENJAMIN W. BLACK, Grantsville, Utah; LAWRENCE F. BOLAND, Stone, Ky.; FRANK O. BRIGHAM, Stanley, N. D.; JOSEPH R. BROWN, San Francisco, Calif.; OSMER L. CALLAHAN, Mount Dora, Fla.; JOHN R. CALAWAY, Mescalero, N. M.; ANDREW C. CAMERON, Birmingham, Ala.; WILLIS W. CAREY, Fort Wayne, Ind.; BURNS S. CHAFFEE, Pittsburgh, Pa.; CHARLES FREDERICK CHILDS, New Boston, Ill.; HARRY A. CLARK, Boston, Mass.; WM. ARTHUR CLARK, Chicago, Ill.; EDGAR CLINE, Auburn, Neb.; GUY RUPERT COFFIN, Monticello, Ind.; JOSEPH F. COOK, Louisville, Ky.; ROBERT PAGE COOKE, Front Royal, Va.; FREDERICK STURGIS COOPER, Lakewood, Ohio; ARIS W. COX, Helena, Ark.; HAROLD BAILEY COX, Morristown, Ind.; LAFAYETTE T. COX, Napoleon, Ind.; CHARLES C. CRAMPTON, Delphi, Ind.; JOHN WEBSTER CRISWELL, Wilkes-Barre, Pa.; CLYDE C. CUNNINGHAM, Seattle, Wash.; THOMAS LYLES DAVIS, Augusta, Ga.; HORACE B. DEAN, Audubon, N. J.; JOHN H. DOANE, Mansfield, Pa.; RICHARD PATRICK DOODY, Cohoes, N. Y.; WILLIAM S. DOW, Brookburg, Ind.; DUMONT DWIRE, Pomona, Calif.; ROBIN ROSE DYSON, Hazleton, Pa.; CHARLES E. EATON, Seattle, Wash.; AMBROSE EARL EDGERTON, Tucson, Ariz.; AUGUSTUS M. EGGERS, Pittsburgh, Pa.; EDWARD PERCY EGLES, New York City; LEE F. ERNSTBERGER, Louisville, Ky.; HUMPHREY NEWTON ERVIN, Dayton, Ky.; EDWARD P. ESSERTIER, Hackensack, N. J.; WILLIAM L. ESTES, South Bethlehem, Pa.; HENRY ANDREW FISHER, Brooklyn, N. Y.; SCOTT ROMAIN FISHER, Syracuse,

N. Y.; ARTHUR JOHN FLETCHER, Connersville, Ind.; LINDSAY Z. FLETCHER, St. Louis, Mo.; CORTLAND W. ELKIN, Pittsburgh, Pa.; WALTER LEON ELLIS, Calexico, Calif.; OLIVER R. FORE, Flora, Miss.; FORREST F. FOWLER, Round Rock, Tex.; JOHN H. FRANKLIN, Guadalupe, Calif.; WILLIAM FRIEDBERGER, Stockton, Calif.; EDMOND B. FULLER, Muscatine, Ia.; EDWIN C. FUNSCH, St. Louis, Mo.; JULIAN E. GAMMON, Jacksonville, Fla.; JOSEPH LOUIS GARIES, Trenton, N. J.; CHARLES C. GARR, New Orleans, La.; WILHELM A. GARTNER, Troy, Kan.; WILLIAM GINSBERG, Cincinnati, O.; CARL GOEHRING, Pittsburgh, Pa.; WILLIAM MITCHELL GOFF, Marysville, Ohio; THOS. VINCENT GOLDEN, Creston, Ia.; FRANK NEWTON GORDON, St. Louis, Mo.; EDWIN JAMES GREER, Ponting, Mich.; LYNN T. HALL, Omaha, Neb.; ROY WALLACE HAMMACK, Los Angeles, Calif.; ROBERT R. HAMPTON, Salt Lake City, Utah; CHARLES CARLETON HARBAUGH, Sedro-Woolley, Wash.; KNUD HARTNACK, Downers Grove, Ill.; FRED E. HARVEY, Minneapolis, Kan.; LEWIS S. HARVEY, Dunlap, Kan.; AUSTIN L. HAUSLOHNER, Wilkes-Barre, Pa.; GEORGE G. HAWKINS, Ione, Calif.; NELSON J. HAWLEY, St. Louis, Mo.; CHARLES M. HENSLEY, Topeka, Kan.; JACOB MEYERS HEYDE, Londonville, Ohio; GARLAND W. HILL, Springfield, Ky.; FRANK B. HILLE, Piqua, Ohio; WILL HILL, Ill.; FRANK W. HOFMEIER, Hagerstown, Md.; WALTER B. HOLTON, Ithaca, N. Y.; CLIFFORD L. HOOPER, Lewellen, Neb.; WM. S. HORN, Fort Worth, Tex.; HOWARD HENRY HOWLETT, Silver Springs, Md.; AUGUST B. HROMADKA, Sawtelle, Calif.; VINCENT L. IRWIN, Granby, Conn.; JAMES THOMAS JETER, Santuck, S. C.; BEVERLY N. JONES, Walnut Cove, N. C.; WM. A. JOSEPH, Hancock, Wis.; CARLETON GALE KELSEY, Hinckley, Minn.; ROBERT KNIGHT, Seneca Falls, N. Y.; HARRY KNOTT, Plymouth, Ind.; JULIUS C. KRAMER, Erie, Pa.; RALPH H. KUHNS, Chicago, Ill.; WALTER EMERY LANG, Allentown, Pa.; HENRY M. LARSON, New York City; PERCIVAL G. LASCHE, Richland Center, Wis.; PHILIP LEWIN, Chicago, Ill.; LAUREN LINDBERGER, Cincinnati, Ohio; A. L. LINDQUIST, Omaha, Neb.; LEON STANLEY LIPPINCOTT, Brunswick, Me.; LOUIS VYASA JAMES LOPEZ, New Orleans, La.; CHESTER L. MAGEE, Los Angeles, Calif.; SAMUEL McALISTER MAUNEY, Karl, Ark.; HARVEY McCARTHY, Kansas City, Mo.; CLINTON McVAY, Salitpa, Ala.; GEORGE HENRY MILLER, Bryn Mawr, Pa.; OSCAR LEE MILLER, Atlanta, Ga.; WILLIAM PATTON MILLIKEN, Oakland, Calif.; JAMES H. MITCHELL, Jr., Cahoes, N. Y.; LEWIS I. MITCHELL, Wichita, Kan.; ROBERT BRUCE MONTGOMERY, Lemon Grove, Calif.; RAYMOND J. MULLIN, Newark, N. J.; LOUIS H. NAHUM, New York City; DEWITT B. NETTLETON, Sewickley, Pa.; WILLIAM HENRY NIX, Indiana, Pa.; WILLEY H. NORTON, Washington, D. C.; ORVEL O'NEAL, Shattuc, Ill.; GEORGE GOTTSMAN NORSTEDT, Fort Scooter, Kan.; DUDLEY R. OWEN, Philadelphia, Pa.; DAVID D. PAULUS, Random Lake, Wis.; CHARLES E. PINCKNEY, Gretna, Neb.; ROBERT TILFORD PIRTLE, Louisville, Ky.; HARRY PLOTZ, Brooklyn, N. Y.; ARMISTEAD DOPER PLANT, Gallup, N. M.; WILLIAM D. SALEN, Riverside, Calif.; JAMES E. RAWLINGS, Fredericksburg, Va.; CHARLES B. REED, Washington, D. C.; GEORGE BALLANTYNE REITZ, Brooklyn, N. Y.; THOMAS JAMES RIACH, Kankakee, Ill.; LEWIS B. ROBINSON, New York City; ADDISON BROCK RODMAN, Reading, Pa.; ROYAL A. SCHAFF, New York City; HENRI SCHMID, Coraopolis, Pa.; GEORGE FRED SCHMIDT, Pipestone, Minn.; GROVER C. SCHWARTZ, Perkasie, Pa.; WILLIAM MARVIN SCRUGGS, Butler, Ind.; AUSTIN SEVERY, Jr., Salem, Columbus, Ohio; WALTER LEO SMALL, Kansas City, Mo.; DANIEL CLARKE W. SMITH, Baltimore, Md.; HENRY G. SMITH, Cedar Grove, N. J.; CLYDE K. STARTZMAN, Bellefontaine, Ohio; JAMES STEINBERG, Los Angeles, Calif.; JOHN A. STEFFET, Bruce Mines, Ont.; TIMOTHY A. SULLIVAN, New York City; FRANCIS J. TALBOT, Niagara Falls, N. Y.; JACKSON TEMPLE, Santa Rosa, Calif.; JOHN WESLEY TIPPIE, Cleveland, Ohio; ELTON L. TITUS, Indianapolis, Ind.; ARTHUR MAURICE TWIST, Hillsboro, Ill.; CARL GEORGE TYLER, Jr., Ripley, Ohio; JOSEPH M. ULRICH, Akron, Ohio; MATTHIAS A. WAGNER, Lima, Ohio; ALFRED AUGUSTA WALKER, Birmingham, Ala.; CLYDE EMIL WATSON, Nampa, Idaho; CHARLES C. WATT, Jr., Philadelphia, Pa.; LEWIS REED, WEED, Baltimore, Md.; ARTHUR WILLIAM WERMUTH, Chicago, Ill.; FRANK ROBERT WHEELOCK, Scranton, Pa.; IRVING HENRY WILLETT, Gary, Ind.; HARRY IOSIAH WILEY, Portersville, Calif.; PAUL RAYMOND WILLIAMS, Cape Girardeau, Mo.; CLAUDE WILSON, Greenville, Ky.; FRED DAY WILSON, Downsville, N. Y.; HOMER SMITH WILSON, Grove City, Pa.; CHARLES JEFFERSON WOODS, New York City; JAMES N. WORCESTER, New York City; EDWARD M. YOUNG, Sheridan, Ind.; WILLIAM J. YOUNG, Orono, Maine; ABRAHAM ZINGHER, New York City.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Dix, Wrightstown, N. J., *Williamsbridge, N. Y.*, and *Hoboken, N. J.*, for conference, and on completion *to his proper station*, Lieut.-Col. PEARCE BAILEY.

To Camp Las Casas, San Juan, Porto Rico, as camp surgeon, from Washington, Lieut.-Col. WILLIAM F. LIPPITT.

To Charlotte, N. C., and *Anniston, Ala.*, for duty, and on completion *to his proper station*, Col. ROBERT E. NOBLE.

To Fort Bayard, N. M., as commanding officer of the U. S. Army General Hospital, from Fort Oglethorpe, Col. HENRY P. BIRMINGHAM.

To Fort Oglethorpe as commandant of Medical Officers' Training Camp, from Washington, D. C., Col. EDWARD L. MUNSON, for inspection, and on completion *to Washington, D. C.*, for consultation, and on completion *to his proper station*, from Fort Leavenworth, Lieut.-Col. CHARLES F. CRAIG.

To New York City, for duty, and on completion *to his proper station*, Col. REUBEN B. MILLER, Cornell Medical College for instruction in military roentgenology, from Camp McClellan, Major ALBERT B. DAVIS.

To Philadelphia, Pa., New York City, New Haven, Conn., Otisville, N. Y., and Long Beach, N. J., for duty, and on completion *to their proper stations*, Lieut.-Cols. JOHN A. HORNSBY, FLOYD KRAMER.

To Washington, D. C., for consultation, and on completion *to his proper station*, Lieut.-Col. WILLIAM H. SMITH. For duty in the Surgeon-General's Office, Lieut.-Col. WILLIAM J. L. LYSTER.

To Whipple Barracks, Ariz., for duty, from Fort Bayard, Major CARL E. HOLMBERG.

The following order has been revoked: *To Whipple Barracks, Ariz.*, for duty, Major WILLIAM F. CARPENTER.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Jackson, Columbia, S. C., base hospital, from Camp Jackson, Lieut. ROBERT GOLDTHWAITE, Montgomery.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieut. ROBERT E. HARWOOD, Gainesville.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. JEROME MEYER, Birmingham.

To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. ARTHUR JOHNSON, Clayton.

To Charlottesville, Va., University of Virginia, for duty, from Camp Sheridan, Lieut. SAMUEL B. NICHOLSEN, Gadsden.

To Fort Oglethorpe for instruction, Lieut. PHILIP M. KYSER, Birmingham.

To Newport News, Va., for duty, Capt.. JAMES B. LAUGHLIN, Huntsville.

Arizona

To Camp Doniphan, Fort Sill, Okla., for duty, from Camp Bowie, Lieut. GEORGE W. PURCELL, Tucson.

Arkansas

To Camp Dix, Wrightstown, N. J., for duty, from Camp Devens, Capt. FEASTER LAG. PROCTOR, Little Rock.

To Camp Doniphan, Fort Sill, Okla., for duty, from Camp Pike, Lieut. ALVIN W. STRAUSS, Little Rock.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. CHARLES K. TOWNSEND, Arkadelphia.

California

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. GEORGE P. HALL, Sunnyvale.

To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Riley, Lieut. JOHN T. KERGAN, Oakland.

To Camp Travis, Fort Sam Houston, Tex., base hospital, Capt. STEPHEN Y. VANMETER, Los Angeles.

To Fort Leavenworth, Kan., for duty, from San Francisco, Major HARRY R. OLIVER, Raw W. Rosson, San Francisco.

To Alcatraz, Calif., for duty, Lieut. GAIL FEHRENSEN, Inglewood.

To Camp Fremont, Palo Alto, Calif., base hospital, Capt. GEORGE W. ENSLEY, Whittier.

To Camp Grant, Rockford, Ill., for observation and treatment, Capt. FRED F. SPRAGUE, Los Banos.

To Camp Lewis, American Lake, Wash., for duty, Lieuts. HOWARD C. CRUM, Hayward; ASA G. WOODWARD, Los Angeles; CLAUDE C. LEAVERTON, Raw W. Rosson, San Francisco.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieuts. LAMBERT B. COBLENTZ, Maria; ALLEN H. VANCE, Sausalito.

To San Francisco, Calif., for instruction, and on completion *to Camp Cody, Deming, N. M.*, base hospital, Capt. LEVI L. HIGGIN, Pasadena. On completion *to Camp Kearny*, Linda Vista, Calif., base hospital, Lieut. WALTER D. BISHOP, Sawtelle. On completion *to Camp Lewis*, American Lake, Wash., base hospital, Lieut. JULIUS B. HAMILTON, Los Angeles. On completion *to his proper station* from Camp Kearny, Capt. RALPH HAGAN, Los Angeles; Lieut. JOHN H. BREYER, Pasadena.

To Starkville, Miss., to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Riley, Lieut. RALPH M. SMITH, San Bernardino.

Colorado

To Camp Lewis, American Lake, Wash., for duty, Capt. FRANK L. DENNIS, Colorado Springs.

To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOHN F. HOWARD, Golden.

To Fort Logan, Colo., for duty, Capt. CHARLES N. FISCHER, Walden.

To Fort Riley for instruction, Lieut WILLIAM H. HALLEY, Denver; from Camp Doniphan, Lieut. ELWYN R. CLARKE, Fort Morgan.

Connecticut

To Camp Gordon, Atlanta, Ga., for duty, Lieut. BARTHOLOMEW C. PASUTH, Bridgeport.

To Camp Jackson, Columbia, S. C., with the board examining the command for nervous and mental diseases, Lieut. STANLEY B. WELD, Hartford.

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Capt. JOHN A. KEYTON, Norwich.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Fort Oglethorpe, Lieut. WILLIAM S. BARNES, New Haven.

To Fort Oglethorpe for instruction, Capt. WILLIAM P. BURKE, New Haven.

To New Haven, Conn., for duty, Lieut. MARCUS C. BECK, Bridgeport.

The following order has been revoked: *To Fort Adams, R. I.*, for duty, Lieut. HOWARD D. MOORE, Danbury.

District of Columbia

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Lieut. HARRY A. BISHOP, Washington.

To Newport News and *Camp Lee*, Petersburg, Va.; *Camp Jackson*, Columbia, S. C.; *Camp Joseph E. Johnston*, Jacksonville, Fla.; *Camp Hancock*, Augusta; *Camp Wheeler*, Macon, and *Camp Gordon*, Atlanta, Ga.; *Camp McClellan*, Anniston, and *Camp Sheridan*, Montgomery, Ala.; *Camp Shelby*, Hattiesburg, Miss.; *Camp Beauregard*, Alexandria, La.; *Camp Logan*, Houston; *Camp Travis*, Fort Sam Houston; *Camp MacArthur*, Waco, and *Camp Bowie*, Fort Worth, Texas; *Camp Funston*, Fort Riley, Kan.; *Scott Field*, Belleville, Ill.; *Camp Zachary Taylor*, Louisville, Ky.; *Wilbur Wright Field*, Dayton, and *Camp Sherman*, Chillicothe, Ohio, for duty, and on completion *to his proper station*, Major FIELDING H. GARRISON, Washington.

Florida

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Capt. EDWARD C. BIRGE, Jacksonville.
To Camp Joseph E. Johnston, Jacksonville, Fla., Lieut. DAVID N. McQUEEN, Punta Gorda.
To Fort Oglethorpe for instruction, Lieut. ROY R. NIBLACK, New Smyrna.

Georgia

To Americus, Ga., for duty, from Atlanta, Major WILLIAM A. JACKSON, Atlanta.
To Camp Glen Burnie, Md., and *Camp A. A. Humphreys*, Accotink, Va., for duty, and on completion *to his proper station*, from Camp Meade, Lieut. RALPH E. HAMILTON, Douglasville.
To Camp Gordon, Atlanta, Ga., for duty, Lieuts. ETHRIDGE J. HALL, Adel; EDWIN R. ANTHONY, Ja., Griffin.
To Camp Hancock, Augusta, Ga., base hospital, from duty as medical aide to the Governor of Georgia, Major WILLIAM C. LYLE, Augusta.
To Camp Pike, Little Rock, Ark., base hospital, Capt. MILLER B. HUTCHINS, Atlanta.
To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, Lieut. SAMUEL LICHTENSTEIN, Augusta.

Idaho

To Camp Glen Burnie, Md., and *Camp A. A. Humphreys*, Accotink, Va., for duty, and on completion *to his proper station*, from Camp Meade, Capt. CLYDE E. WATSON, Nampa.
To Camp Pike, Little Rock, Ark., with the board examining the troops for cardio-vascular diseases, from Fort Riley, Lieut. MAURICE H. TALLMAN, Boise.
To Fort Riley for instruction, Lieut. RALPH FALK, Boise.

Illinois

To Camp Bowie, Fort Worth, Tex., as member of a board examining the command for tuberculosis, from Fort Riley, Capt. CHARLES H. POWELL, Old Ripley.
To Camp Custer, Battle Creek, Mich., for duty, Lieuts. OLIVER J. FLINT, Princeton; JAMES F. JENNINGS, Scotland.
To Camp Dodge, Des Moines, Ia., for duty, Major CHARLES D. WILKINS, Chicago; Capts. GEORGE L. A. DALE, WILLIAM K. MURRAY, Chicago; from Fort Riley, Lieut. BYFORD R. WEBB, West Frankfort.
To Camp Glen Burnie, Md., and *Camp A. A. Humphreys*, Accotink, Va., for duty, and on completion *to his proper station*, from Camp Meade, Lieut. JOHN F. GRANT, Chicago.
To Camp Gordon, Atlanta, Ga., for duty, Capt. JOHN M. AXELSON, Lieut. GUSTAVE W. LAWSON, Chicago. For temporary duty, from Atlanta, Lieut. OTTO E. SCHOTT, Chicago.
To Camp Grant, Rockford, Ill., for duty, from Jefferson Barracks, Lieut. GUY E. KROLICK, Chicago.
To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. GRANT J. GRAY, Chicago; Lieut. ARTHUR S. CAMPBELL, Oak Forest.
To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Riley, Capt. WILLIAM D. NAPHEYS, Jr., Chicago; from Newport News, Lieut. GEORGE S. MATHERS, Chicago.
To Camp Pike, Little Rock, Ark., with the board examining the troops for cardiovascular diseases, Capt. WILLIAM H. BURMEISTER, Chicago.
To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. CLAYTON J. HYSLOP, Chicago.
To Fort Riley, base hospital, Capt. JOHN C. LINDSAY, Chicago. For instruction, Lieuts. OLIVER M. HOLLIDAY, Melrose Park; Lieuts. VINCENT GINO, FRANCIS B. McNORTNEY, JOSEPH MOLES, JOHN H. MOORE, CHARLES E. WHITEHEAD, Chicago; RICHARD F. GREENING, Park Ridge; OFARD F. MAY, Towanda.
To Fort Sheridan, for duty, Capts. EMANUEL A. SKNN, Chicago; WILLIAM F. SCOTT, Maywood; CHARLES W. HUNTER, Oneida; FRANK N. WELLS, Pittsfield; Lieuts. IRA B. ROBERTSON, HENRY J. WAY, Chicago; WILLIAM B. HARRINGTON, La Salle; CHARLES E. RISELING, Murphysboro; WILLIS F. HARVEY, Rushville.
To Rochester, N. Y., for duty, and on completion *to his proper station*, Major HARRY E. MOCK, Chicago.
To New York City, Bellevue Hospital, for instruction, and on completion *to Colonia, N. J.*, for temporary duty, from New York City, Lieut. CHESTER W. TROWBRIDGE, Oak Park. Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Capt. CHARLES FORD, Wagoner; Lieuts. PETER G. KITTERMAN, LUTHER L. TURNER, Chicago.
To report by wire to the commanding general, Central Department, for assignment to duty, Lieut. HARRY L. KAMPEN, Monmouth.
To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Capt. CLARENCE W. GEYER, Aurora.
The following orders have been revoked: *To Chicago, Ill.*, University of Chicago, Lewis Institute, and Harrison Technical High School, to make physical examinations and give medical attention to the drafted men enrolled in these institutions, and on completion *to his proper station*, Lieut. JACOB A. GOODMAN, Chicago. *To Fort Riley* for instruction, Lieut. JAMES N. BUCHANAN, Chicago.

Indiana

To Camp Dodge, Des Moines, Iowa, for duty, Capt. GEORGE W. TWOMEY, Elkhart; Lieut. REVEL F. BANISTER, Washington.
To Camp Lee, Petersburg, Va., for duty, Lieut. EDWIN E. KIME, Indianapolis.
To Fort Oglethorpe for instruction, Capt. LINLEY M. REAGAN, Tipton; Lieuts. CARLTON L. ROWELL, Valparaiso; from Camp Devens, Lieut. THOMAS P. GOVAN, Richmond; from Camp Sherman, Lieuts. HARVEY K. STORK, Huntingburg; LEO A. SALB, Jasper.
To Washington, D. C., for temporary duty, Capt. JOHN R. NEWCOMB, Indianapolis.
The following order has been revoked: *To Rochester, Minn.*, Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Custer, Lieut. JOHN G. GLACKMAN, Hatfield.

Iowa

To Camp Dodge, Des Moines, Ia., base hospital, Capt. ARTHUR H. McCREIGHT, Fort Dodge. For duty, Lieut. MALCOLM S. CAMPBELL, Malvern.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Camp Logan, Lieut. RAYMOND H. MUNFORD, Dodge City.
To Camp Lewis, American Lake, Wash., for duty, Lieuts. COLIN C. THOMAS, Monticello; WILLIAM N. GORDON, Rowan.
To Fort Riley for instruction, Lieut. JOHN T. HANNA, Kellogg.
To Long Island, City, L. I., N. Y., for duty, from Camp Wheeler, Lieut. JOHN D. HEXOM, Decorah.
To New Orleans, La., Tulane University, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Riley, Lieut. DAN L. MAHONEY, Dubuque.
Tuscaloosa, Ala., University of Alabama, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Oglethorpe, Lieut. GEORGE H. STEELE, Belmond.
The following order has been revoked: *To Camp Fremont*, Palo Alto, Calif., base hospital, from Camp Lewis, Capt. MARCUS C. TERRY, Jr., Brighton.

Kansas

To Camp Dodge, Des Moines, Ia., for duty, from Fort Riley, Lieut. HUGH L. CHARLES, Atchison.
To Fort Riley, base hospital, Capt. WILLIAM G. MANESS, Preston. For instruction, Lieut. CARL C. CULVER, Burlington.
To New York City, Cornell Medical College, for instruction in military roentgenology, from Hoboken, Lieut. JAMES A. H. WEBB, Stafford.
The following order has been revoked: *To Rockefeller Institute* for instruction and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, from Fort Riley, Lieut. NOBLE E. MELENCAMP, Dodge City.

Kentucky

To Camp Gordon, Atlanta, Ga., for duty, Capt. LLEWELLYN P. SPEARS, Louisville.
To Camp Jackson, Columbia, S. C., base hospital, Lieut. JOHN W. MOSS, Louisville.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. PERRY W. BUSHONG, Edmonton.
To Camp Shelby, Hattiesburg, Miss., base hospital, from Camp Wadsworth, Lieut. CARL C. HOWARD, Glasgow.
To Camp Sheridan, Montgomery, Ala., for duty, Capt. HERBERT S. CHASE, Junction City.
To Camp Crane, Allentown, Pa., base hospital, Lieut. ROBERT SORY, Madison.
To Camp Gordon, Atlanta, Ga., for duty, Lieuts. WILLIAM B. NEGLEY, Henderson; JOHN W. DYER, Louisville; SMITH A. BLACKSMITH, Versailles.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. SAMUEL B. PULLIAM, Paducah.
To Camp Lee, Petersburg, Va., for duty, Lieut. EDWARD L. INMAN, Williamsburg.
To Camp Zachary Taylor, Louisville, Ky., base hospital, Capt. RICHARD F. DUNCAN, Tompkinsville; from Camp Dodge, Capt. STEPHEN C. McCOY, Louisville.
To Fort Oglethorpe for instruction, Capt. JOHN L. STILLINGS, Green Mount.
To report by wire to the commanding general, Central Dept., for assignment to duty, Capt. GEORGE M. SHAUNTY, Louisville.
To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. STONEWALL J. SMOCK, Glasgow.

Louisiana

To Army Medical School for instruction, from Camp Jackson, Capt. RALPH HOPKINS, New Orleans.
To Austin, Tex., University of Texas, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Sam Houston, Lieut. WALTER P. LAMBETH, Allendale.
To Camp Shelby, Hattiesburg, Miss., as a member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieuts. HENRY C. LOCHTE, New Orleans; EWELL A. KLEINPETER, Thibodaux.
To Chicago, Ill., for duty, and on completion *to Washington, D. C.*, Major ISAAC MOORE, New Orleans.
To Fort Oglethorpe for instruction, Lieuts. DAWSON T. MARTIN, Acy; JOHN P. FRAZER, DeRidder; JAMES W. KIRBY, HENRY W. REEVES, New Orleans.
To New Orleans, La., Charity Hospital, for instruction, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, Lieut. WILTZ McP. LEDBETTER, Shreveport.
To Washington, D. C., for consultation, and on completion *to Camp Beauregard*, Alexandria, La., base hospital, Major JOSEPH A. DANNA, New Orleans.

Maine

To Camp Devens, Ayer, Mass., base hospital, Capt. FRED E. WHEET, Rumford.
To Camp Sevier, Greenville, S. C., for duty, Capt. ALBA G. WALKER, Houlton. As a member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES B. SYLVESTER, Harrison. Base hospital, Lieut. JAMES W. STURTEVANT, Dixfield.
To Fort Oglethorpe for instruction, Lieut. WILLIAM E. EMERY, Bangor.
To New Haven, Conn., as instructor, from Fort Oglethorpe, Major NELSON E. NICHOLS, Portland.
To Williamsbridge, N. Y., for duty, from Fort Slocum, Lieut. ARTHUR C. WRIGHT, Augusta.

Maryland

To Camp Crane, Allentown, Pa., base hospital, from Camp Jackson, Major ANDREW J. N. REIK, Baltimore.
To Camp Lee, Petersburg, Va., for duty, Capt. WILLIAM D. SCOTT, South Baltimore.
To Fort Oglethorpe for instruction, Lieut. MOSES L. LICHTENBERG, Baltimore.
To Waynesville, N. C., for temporary duty, from Edgewood, Lieut. MOSES R. KAHN, Baltimore.

Massachusetts

To Camp Devens, Ayer, Mass., base hospital, Majors SAMUEL J. MIXTER, JOHN J. THOMAS, Boston; from Boston, Capt. CORNELIUS McGILLICUDDY, Boston; Lieuts. WILLIAM K. TURNER, New Bedford; WILLIAM J. HARKINS, Quincy. For duty, from duty as a contract surgeon, Capt. HORACE K. BOUTWELL, Brookline. To examine the command for nervous and mental diseases, Lieut. EARLE H. MACMICHAEL, Malden.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp MacArthur, Major CHARLES DUDLEY, Kingston.

To Aberdeen, Md., for duty, from Dansville, Major ARTHUR H. CROSBIE, Boston.

To Army Medical School for orthopedic instruction, and on completion *to his proper station*, from Boston, Capt. MARK H. ROGERS, Boston.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. HENRY ZIMMERMAN, Springfield.

To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOSEPH J. COSGROVE, Westfield.

To Camp Meade, Annapolis Junction, Md., for instruction in duties of division psychiatrist, Major GEORGE E. McPHERSON, Medfield.

To Camp Sevier, Greenville, S. C., for duty, Capt. DANIEL C. GREENE, Newton Centre; CHARLES W. ROBERTSON, North Dena.

To Fort Oglethorpe, base hospital, from Camp Dix, Lieut. DANIEL J. FENNELLY, Fall River. For instruction, Capt. BERNARD RABINOVITZ, Springfield; Lieuts. PAUL W. EMERSON, Boston; WALTER C. FRIDAY, Maben.

To Fort Slocum, N. Y., for duty, from Camp Dix, Capt. ALFRED P. CHRONQUEST, Hathorne.

To Newport News, Va., for duty, from Fort Sam Houston, Lieut. CHARLES B. SPRUIT, Boston.

To Saybrook, Conn., for duty, from Fort H. G. Wright, Capt. ARTHUR P. PERRY, Boston.

To Walter Reed General Hospital, Takoma Park, D. C., for conference, and on completion *to his proper station*, Major KENDALL EMERSON, Worcester.

To Washington, D. C., for temporary duty in the Surgeon-General's Office, Lieut. McIVER WOODY, Boston.

Michigan

To Camp Custer, Battle Creek, Mich., base hospital, Capts. HARRY F. TAYLOR, Mt. Clemens; GEORGE W. MacKINNON, Oxford. For duty, Capt. WALTER R. T. SHARPE, Romeo.

To Camp Dodge, Des Moines, Ia., for duty, Capt. JAMES W. McEWAN, Detroit; Lieut. FREDERICK C. MAYNE, Charlevoix.

To Camp Grant, Rockford, Ill., base hospital, Major MAX BALLIN, Detroit.

To Camp Sevier, Greenville, S. C., as orthopedic surgeon, from Walter Reed General Hospital, Lieut. HAROLD A. BECK, Detroit.

To Camp Shelby, Hattiesburg, Miss., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOHN J. MILLER, Berlin.

To Fort Oglethorpe for duty, from Camp Lee, Capt. HUGH McD. BEEBE, Ann Arbor. For instruction, Capt. JOHN P. BLAND, Adrian; Lieuts. LLOYD G. CAMPBELL, Birmingham; ALONZO B. PERSLEY, CLARENCE STEFANSKI, Detroit; WALTER VAN DE ERVE, Norway.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Sheridan, Capt. FRANK C. KINSEY, Grand Rapids.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. ZENO L. KAMINSKI, Detroit. Neurological Institute, for instruction, and on completion *to his proper station*, from Camp Custer, Major ROY B. CANFIELD, Ann Arbor.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. WYNNE C. GARVIN, Millington.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Grant, Lieut. EMIL V. MAYER, Detroit.

Minnesota

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. MacSEHAM, Minneapolis.

To Camp Lewis, American Lake, Wash., for duty, Capt. HARRY S. JONES, Minneapolis; Lieuts. SIMON O. WALKOWIAK, Duluth; WILLIAM H. CONNER, Finlayson; GERHARD F. HARTWIG, Young America.

To Fort Oglethorpe for instruction, Lieut. GEORGE V. LYNCH, St. Paul.

To Fort Riley, base hospital, from Camp Grant, Lieuts. WILLIAM R. WINNE, Rochester; WILLIAM A. MIERDING, Springfield.

To Fort Snelling, Minn., for duty, from Camp Shelby, Capt. GEORGE H. NORRIS, Annandale.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp Grant, Lieut. IRVING G. WILTROUT, Minneapolis.

To Washington, D. C., for duty in the Surgeon-General's Office, Major CHARLES G. MAYO, Rochester.

Mississippi

To Fort Sam Houston, Tex., for duty, Capt. JOHN E. DAVIS, Columbus; Lieut. WALTER C. ROYALS, Meridian.

Missouri

To Army Medical School for duty, Lieut. EUGENE B. MUNIER, Bradleyville. For instruction, Lieut. HOWARD S. MAUPIN, Sheldon.

To Camp Bowie, Fort Worth, Tex., as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. ARTHUR W. KOESSEL, St. Louis.

To Camp Custer, Battle Creek, Mich., base hospital, from St. Louis, Lieut. GEORGE M. MYERS, St. Louis. For duty, Lieut. DEWILTON TIMBERMAN, St. Louis.

To Camp Dodge, Des Moines, Ia., for duty, Lieut. HARRY BRAUN, Independence.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. MAURICE J. LONSWAY, St. Louis.

To Camp Kearny, Linda Vista, Calif., base hospital, Capt. LOUIS A. KEMPFF, St. Louis.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. JULIUS A. ROSSEN, St. Louis.

To Fort Riley, base hospital, Capt. JOHN H. GEORGE, Leeds; Lieut. JOSEPH L. GLENN, St. Louis.

To Millington, Tenn., Park Field, for inspection, and on completion *to Lonoke, Ark.*, from Lonoke, Capt. DON R. JOSEPH, St. Louis.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Colonia, N. J., for temporary duty, Capt. VICTOR CADWELL, Poplar Bluff. On completion to Camp Wadsworth, Spartanburg, S. C., base hospital, Capt. WM. T. ELAN, St. Joseph.

Montana

To Camp Lewis, American Lake, Wash., base hospital, Capts. DONALD A. McCLENNAN, Cascade; JOHN T. FOLEY, Lewistown. For duty, Lieut. WENDELL COTTON, Forsyth.

To Chicago, Ill., University of Chicago, *Lewis Institute* and *Harrison Technical High School*, to make physical examinations and give medical attention to the drafted men enrolled at these institutions, and on completion *to his proper station*, from Camp Dodge, Lieut. MARK [redacted]ORNHOLT, Glasgow.

To Fort Riley for instruction, Lieut. CHRIS E. EMERY, Butte.

To San Francisco, Calif., for instruction, and on completion *to Camp Lewis*, American Lake, Wash., base hospital, Capt. MAX A. DORLAND, Anaconda.

The following order has been revoked: *To Jefferson Barracks, Mo.*, for temporary duty, and on completion *to his proper station*, from Camp Doniphan, Lieut. JOHN J. TOBINSKI, Missoula.

Nebraska

To Burlington, Vt., University of Vermont, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Camp Dix, Capt. WILLIAM J. PINKERTON, Bostwick.

To Camp Pike, Little Rock, Ark., for duty, from Camp Dodge, Lieuts. FRANCIS M. SWARTWOOD, Bethany; HAL D. WILMETH, Lincoln; ARNOLD M. SONNELAND, Norfolk.

To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. WILLIAM N. ANDERSON, Omaha; Lieut. TORRENCE C. MOYER, Lincoln.

To Fort Riley, base hospital, Capt. WILLIAM EVANS, Columbus. For instruction, Capt. JAMES S. TAYLOR, Fairbury. For temporary duty, Lieut. HARVEY B. STAPLETON, Omaha.

To Fort Sam Houston, Tex., for duty, Lieuts. JOHN T. REES, Fort McDermott; EDWARD A. VAN VLEET, Omaha; WILLIAM S. DINSMORE, Pierce.

To report by wire to the commanding general, Central Dept. for assignment to duty, Capt. FRANK C. GENUNG, Wausa.

Nevada

To Camp Fremont, Palo Alto, Calif., base hospital, from San Francisco, Capt. BENJAMIN F. CUNNINGHAM, Reno.

New Jersey

To Camp Dix, Wrightstown, N. J., for duty, Lieut. CHARLES BROWNE, Princeton.

To Camp Gordon, Atlanta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. SAMUEL BLAUGRUND, Trenton.

To Camp Grant, Rockford, Ill., as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. LEO V. ROSENTHAL, Trenton.

To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. GRANT THORNBURN, Newark.

To Camp Lee, Petersburg, Va., for duty, Lieuts. SAMUEL S. FERN, Elizabeth; ELMER M. MOUNT, Jersey City.

To Camp Wadsworth, Spartanburg, S. C., with the board examining the troops for cardiovascular diseases, Lieut. JAMES D. TRASK, Jr., Highlands.

To Fort Oglethorpe for instruction, Capt. WILLIAM H. SLOCUM, Long Branch; Lieut. HARVEY W. HARTMAN, Mayport.

To Rockefeller Institute for instruction in treatment of infected wounds, and on completion *to Camp Greene*, Charlotte, N. C., base hospital, from New York City, Lieut. LEONARD M. KALAHER, Jersey City.

The following order has been revoked: *To Hoboken, N. J.*, for duty, from Fort Oglethorpe, Lieut. HENRY KLAUS, West Hoboken.

New Mexico

To San Francisco, Calif., for instruction, and on completion *to his proper station*, from Camp Cody, Capt. OLIVER J. WESTLAKE, Silver City. On completion *to Camp Lewis*, American Lake, Wash., base hospital, Lieut. LAMENT A. HUBBARD, Van Houten.

New York

To Washington, D. C., St. Elizabeth's Hospital, for intensive training, Capts. HERMAN L. RAYMOND, Collins; WILLIAM R. WOODBURY, Rochester.

To Williamsbridge, N. Y., for duty, from Surgeon-General's Office, Major SIGMUND POLLITZER, New York. For observation and treatment, Capt. WALTER W. OSGOOD, Jordan. For temporary duty, Lieut. CLARENCE R. THOMAS, New York.

To Camp Beauregard, Alexandria, La., base hospital, from Walter Reed General Hospital, Major THOMAS W. HASTINGS, New York.

To Camp Dix, Wrightstown, N. J., base hospital, from Washington, Major SIDNEY BERNAP, New York; from Camp Sevier, Capt. GREGORY J. COSTIGAN, New York; from Camp Upton, Lieut. GEORGE W. SCHENCK, New York.

To Akron, Ohio, University of Akron, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, Lieut. CHARLES GOTTLIEB, New York.

To Army Medical School for instructions, Lieut. EUGENE D. QUINLAN, Allegany.

To Camp A. A. Humphreys, Accotink, Va., to examine the command for tuberculosis, from Fort Oglethorpe, Capt. EDWARD P. EGLES, New York.

To Camp Devens, Ayer, Mass., for duty, from New York, Major LEWIS T. GRIFFITH, New York. Base hospital, Major CHARLES H. YOUNG, Lieut. HERMAN SMITH, New York.

To Camp Dix, Wrightstown, N. J., base hospital, from Williamsbridge, Capt. EDMOND J. BARNES, New York.

To Camp Gordon, Atlanta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. LAURENCE B. BOYLAN, Woodhaven. For duty, Lieut. MOSES LOBSENZ, New York.

To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, Lieut. ELIAS GAMRIN, New York.

To Camp Lee, Petersburg, Va., for duty, Capt. NELSON W. JANNEY, New York; Lieuts. LESTER E. SANFORD, Albany; ABRAHAM SHORR, Brooklyn; RAY WOODWARD, Lackawanna.

To Camp Pike, Little Rock, Ark., base hospital, Capt. NELSON W. JANNEY, New York; Lieut. HUDSON J. WILSON, Ithaca; from

Army Medical School, Lieut. EPHRAIM M. BLUESTONE, New York.

To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. HENRY M. SPOFFORD, Batavia. Base hospital, from Camp Hancock, Lieut. WALTER G. H. POTTS, New York. For duty, Lieuts. MORRIS WEISSBERG, Brooklyn; MICHAEL F. SULLIVAN, Pyrites; JOHN C. DESLOCH, Rochester.

To Camp Upton, L. I., N. Y., base hospital, Capt. FREDERICK M. BARNEY, Dolgeville.

To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capts. JOSEPH P. O'BRIEN, Albany; BRUNE S. HOROWICZ, MILTON SCHAIE, New York.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. THOMAS M. MARKS, New York.

To Edgewood, Md., base hospital, Capt. FREDERICK W. FILSINGER, Buffalo.

To Fort McHenry, Md., base hospital, Lieuts. RALPH N. ARNOLD, Blackwell's Island; ADOLPH S. KRAMER, Brooklyn.

To Fort Oglethorpe for duty, Major THOMAS J. HARRIS, Lieut. JOHN L. KANTOR, New York. For instruction, Lieuts. HARRY I. HANDELMAN, Bronx; URBAN A. FISCHER, Buffalo; GEORGE J. HOGBEN, Rye; from Camp Upton, Lieut. ABRAHAM L. MARGOLIES, New York.

To Fort Sill, Okla., as a medical member of the examining board and recruiting officer, from Camp Kelly, Lieut. LAWRENCE D. CREMIN, Ossining.

To Hoboken, N. J., for duty, from Rockefeller Institute, Lieut. MORRIS MASLON, Little Falls.

To New Haven, Conn., as instructor, from Fort Oglethorpe, Capt. JAMES W. PRICE, Saranac Lake.

To New York City, Neurological Institute, for instruction, from Army Medical School, Capt. ARTHUR F. HOLDING, New York. New York University to make physical examinations, and give medical attention to the drafted men enrolled at this institution, and on completion *to the inactive list*, Lieut. GEORGE KORNFELD, Brooklyn.

To Plattsburg Barracks, N. Y., for duty, Capts. VARNEY R. HAMLIN, Clinton; JAMES F. GILLETTE, New York; Lieuts. WILLIAM J. ROSS, Clayton; MYRON E. FISHER, Delavan; WILLARD C. THOMPSON, Plattsburg; DANIEL A. EISELINE, Shortsville.

To report by wire to the commanding general, Eastern Department, for assignment to duty, Capt. EDWARD L. AYMS, New York.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Bellevue Hospital* for further instruction, and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, Capt. WILLIAM S. SMITH, Brooklyn. On completion to *Camp Dix*, Wrightstown, N. J., base hospital, Lieut. ROYALE H. FOWLER, Brooklyn. On completion *to Camp Grant*, Rockford, Ill., base hospital, Lieut. BURTON E. LOVESEY, New York. On completion to *Camp Shelby*, Hattiesburg, Miss., base hospital, Lieut. HERBERT M. VANN, Brooklyn. On completion *to Fort Oglethorpe*, Lieut. JOSEPH TENOPYR, Brooklyn. For instruction in laboratory work and on completion *to Army Medical School*, for duty, Lieut. WILLIAM C. STADIE, New York.

To Washington, D. C., for consultation, and on completion *to his proper station*, from New York City, Lieut. HENRY W. HAYNES, New York.

The following orders have been revoked: *To Camp Dix*, Wrightstown, N. J., for duty, from Camp Upton, Lieut. GEORGE W. SCHENCK, New York. *To Camp Lee*, Petersburg, Va., base hospital, from New York, Lieut. HERMAN B. PHILIPS, New York. *To College Station, Tex.*, from Houston, Capt. GEORGE W. BEEBE, Johnsville.

North Carolina

To Camp Lee, Petersburg, Va., for duty, Lieut. MAX C. KING, Franklinton.

To New Haven, Conn., for duty, from Fort Oglethorpe, Capt. CHARLES S. JORDAN, Asheville.

To Sheffield, Ala., for duty, Lieut. JOHN M. BARNHARDT, Mt. Pleasant.

Ohio

To Camp Beauregard, Alexandria, La., for duty, from Fort Oglethorpe, Lieut. RAYMOND E. GASTON, Cincinnati.

To Camp Crane, Allentown, Pa., base hospital, from Camp Grant, Capt. JOHN H. HARVEY, Toledo; from Camp Dix, Lieut. HAROLD O. RUH, Cleveland.

To Camp Dodge, Des Moines, Iowa; *Camp Grant*, Rockford, Ill., and *Camp Zachary Taylor*, Louisville, Ky., for conference, and on completion *to his proper station*, from Fort Riley, Major WILLARD J. STONE, Toledo.

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Lewis, Lieut. CHARLES F. MORRIS, Youngstown.

To Camp Custer, Battle Creek, Mich., for duty, Capt. ORR A. DICKSON, Jefferson.

To Camp Dodge, Des Moines, Ia., for duty, Capt. OLIVER H. PINNEY, Cincinnati.

To Camp Lee, Petersburg, Va., for duty, Lieut. GEORGE A. ROWLAND, Delaware.

To Camp Shelby, Hattiesburg, Miss., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. CARL MULKY, Warrensville.

To Camp Sherman, Chillicothe, Ohio, base hospital, Capt. JAMES T. MERWIN, Athens.

To Chicago, Ill., for orthopedic instruction, from Fort Riley, Lieut. RAY B. BOWEN, Toledo.

To Fort Oglethorpe for instruction, Capts. SMITH E. McADOO, Akron; HIRAM P. H. ROBINSON, Medina, Lieuts. RALPH T. SAUNDERS, Findlay; MELVILLE F. WALKER, Cincinnati.

To Fort Riley, evacuation hospital, from Fort McPherson, Major JOSEPH L. RANSCHOFF, Cincinnati.

To New York City, Cornell Medical College, for instruction in military roentgenology, Capt. JOHN D. OSMOND, Cleveland.

To report by wire to the commanding general, Central Department, for assignment to duty, Lieut. WARREN B. KEATOR, Findlay.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Hoboken, N. J.*, for temporary duty, Capt. JOHN J. SILBAUGH, Lancaster.

The following order has been revoked: *To Camp Crane*, Allentown, Pa., base hospital, from Camp Grant, Capt. JOHN H. HARVEY, Toledo.

Oklahoma

To Del Rio, Tex., for duty, from Fort Sam Houston, Major JULIUS A. MULLER, Snyder.

To Fort Oglethorpe for instruction, Lieut. WALTER H. DERSCH, Oklahoma City.

To Fort Riley for instruction, Lieut. ARLANDER S. GRAYDON, Idabel.

To Fort Sam Houston, Tex., for duty, Lieut. ROBERT E. L. THACKER, Lexington.

To Tulsa, Okla., to examine the applicants for appointment in the Medical Reserve Corps of the Army and on completion *to the inactive list*, Lieut. LLOYD M. SACKETT, Oklahoma City.

The following order has been revoked: *To Jefferson Barracks, Mo.*, for temporary duty, and on completion *to his proper station*, from Camp Doniphan, Lieut. CLYDE F. LOY, Shawnee.

Oregon

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieuts. EMILE C. JOSEPH, Corwallis; GLENN E. PRIME, Falls City; HARRY E. SHOOT, Portland.

To Camp Lewis, American Lake, Wash., for duty, Lieuts. JACOB PRINZING, Ontario; WILLIAM B. HAMILTON, LEON E. STORY, Portland.

To Fort Riley for instruction, Capt. BENJAMIN F. SCAIEFE, Eugene.

To San Francisco, Calif., for instruction and on completion *to Camp Kearney*, Linda Vista, Calif., base hospital, Lieut. ROSCOE W. CAHILL, Portland.

Pennsylvania

To Camp Lee, Petersburg, Va., base hospital, Lieut. EDWIN P. LONGAKER, Philadelphia; from New York City, Major EWING W. DAY, Pittsburgh.

To Fox Hills, N. Y., for duty, Capt. FRANK B. GUMMEY, Philadelphia.

To Hoboken, N. J., base hospital, Lieut. HENRY WILDERMAN, Philadelphia. For temporary duty, Lieut. CLAIR F. VALE, Philadelphia.

To Jeffersonville, Ind., for duty, from Camp Gordon, Lieut. LEON FELDERMAN, Philadelphia.

To Army Medical School for instructions, Lieut. GILBERT L. DAILEY, Harrisburg.

To Camp Beauregard, Alexandria, La., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. ALFRED A. FERRY, Philadelphia.

To Camp Crane, Allentown, Pa., base hospital, Lieut. JOHN R. DAVIES, Philadelphia. For duty, Lieut. NORTIMER W. BLAIR, Philadelphia.

To Camp Glen Burnie, Md., and *Camp A. A. Humphreys*, Accotink, Va., for duty, and on completion *to his proper station*, from Camp Meade, Lieuts. RALPH L. ENGLE, ABRAHAM TRASOFF, Philadelphia.

To Camp Gordon, Atlanta, Ga., for orthopedic instruction, from Fort Oglethorpe, Lieut. WILLIAM G. ELY, Philadelphia.

To Camp Grant, Rockford, Ill., as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. HUGO S. SARCHET, Pittsburgh. Base hospital, from New York City, Lieut. THOMAS M. McMILLAN, Philadelphia.

To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. THOMAS L. COLEY, Philadelphia.

To Camp Lee, Petersburg, Va., for duty, Lieuts. JOHN W. MACMULLEN Harrisburg; JACOB M. CAHAN, Philadelphia; ROBERT McG. HURSH, Steelton.

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, JAMES A. BUCHANAN, Strickersville; Lieut. LAWRENCE L. BLACKBURN, Philadelphia.

To Camp Pike, Little Rock, Ark., base hospital, Lieut. EVERETT HALE TOMB, Indiana.

To Camp Sevier, Greenville, S. C., for duty, Lieut. JOHN H. TURNER, III., Philadelphia.

To Camp Shelby, Hattiesburg, Miss., as member of a board of officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. WILLIAM RUOFF, Philadelphia.

To College Station, Tex., Penn State College, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, Lieut. WILLIAM N. WATSON, Merion.

To Fort Oglethorpe for instruction, Capt. HARRY A. SPANGLER, Carlisle; Lieuts. SAMUEL W. REEVES, Penn Grove; EDWIN F. BROPHY, Meadville; NATHAN B. KUPFER, Philadelphia; MAX TISCHLER, Wilkes-Barre.

To Hoboken, N. J., for duty, from Aberdeen, Capt. JAMES L. JUNK, Connellsville.

To Lakewood, N. J., for duty, from Camp Meade, Lieut. CLARENCE A. PATTEN, Philadelphia.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Camp Taliaferro, Lieut. GEORGE S. CUNNINGHAM, Pittsburgh.

To New Haven, Conn., for duty, from Fort Oglethorpe, Lieut. FRANK P. D. RECKFORD, Harrisburg.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Slocum, Capt. JAMES WARD, Lucernemines.

To Philadelphia, Pa., to examine applicants for appointment to Medical Reserve Corps of the Army, Lieut. JOHN W. WEST, Philadelphia.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, Lieut. STANLEY P. REIMANN, Philadelphia.

To Tuskegee, Ala., Normal Institute, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Oglethorpe, Lieut. PIUS A. NOLL, Glen Rock.

The following orders have been revoked: *To Jeffersonville, Ind.*, Jeffersonville Depot for duty, from Camp Gordon, Lieut. LEON FELDERMAN, Philadelphia. *To New York City*, New York University, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, and on completion *to his proper station*, from Madison Barracks, Capt. SYDNEY K. FENOLLOSA, Pittsburgh.

Porto Rico

To San Juan, Porto Rico, for duty, Capt. LEVIS C. BABCOCK, San Juan; Lieuts. MANUEL C. DUEÑO, Anasco; JAIME RIVAS, Caguas; JUAN G. BAJANDAS, Maunabo; JOSE A. LOYALA Penuelas; JOSE B. GOTAY, Ponce; JOSE F. TRILLA, Truillo Alto; JAMES S. M. PRESSLY, Vieques; ANTONIO ARBONA, Villalba; MIGUEL A. MARIANI, Yauco.

South Carolina

To Camp Gordon, Atlanta, Ga., for duty, Lieut. HAWKINS W. CORBETT, Mayesville.

To Camp Sevier, Greenville, S. C., for duty, Capt. EDWARD G. L. ADAMS, Columbia.

To Fort McPherson, Ga., for duty, from Army Medical School, Lieut. GEORGE F. KLUGH, Cross Hill.

To Fort Oglethorpe for instruction, from duty as a private, Lieut. JOSEPH F. GUESS, Charleston.

South Dakota

To Fort Riley for instruction, Lieut. OSCAR W. TULISALO, Bellefourche.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. CHARLES S. LANGLEY, Lake Andes.

Tennessee

To Camp Custer, Battle Creek, Mich., base hospital, Capt. WALTER S. DOTSON, Lebanon.

To Camp Gordon, Atlanta, Ga., for duty, Capts. WILLIAM P. ATCHLEY, Knoxville; from Army Medical School, WILLIAM N. LACKEY, Gallatin.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. JOHN E. HALL, Nashville.

To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOHN O. WOODS, Newport.

To Fort Oglethorpe for instruction, Capt. DAVID R. NEIL, Nashville; Lieuts. ALFRED V. KEEBLER, Bristol; JOHN H. REVINGTON, Chattanooga.

To Fort Sam Houston, Texas, for duty, Lieut BOONE E. NOBLIT, Fayetteville.

To Fort Worth, Texas, Signal Corps Aviation School, from Mineola, Capt. LOUIS LEVY, Memphis.

To Hoboken, N. J., base hospital, from New York City, Lieut. THOS. O. MENEES, Nashville.

To New York City, Neurological Institute, for instruction, Lieut. RAPHAEL E. SEMMES, Memphis.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Upton, L. I., N. Y.*, base hospital, Capt. HARRISON H. SHOULDERS, Nashville.

Texas

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. CHARLES E. SCULL, San Antonio.

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieuts. LOUIS A. EDMUNDSON, Bethel; GLENN BARTLETT, Kingsville.

To Camp Joseph E. Johnston, Jacksonville, Fla., as orthopedic surgeon, from Army Medical School, Capt. LOUIS E. DEVENDORF, Taft.

To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Lieut. EDWARD B. JONES, Jacksonville.

To Boulder, Colo., University of Colorado, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Riley, Lieut. DAVID C. WILLIAMS, Post.

To Camp Bowie, Fort Worth, Texas, as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. CHARLES R. GOWEN, Carlsbad.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. WILBIAM E. RAMSEY, Houston.

To Camp Doniphan, Fort Sill, Okla., for duty, Capt. WILLIAM D. CURRAN, Waco.

To Camp Logan, Houston, Texas, for duty, Capt. FRANK G. PARKHILL, Houston.

To Camp MacArthur, Waco, Texas, for duty, Lieut. CHARLES W. CASTNER, Terrell.

To Fort Oglethorpe for instruction, Lieuts. THOMAS B. BOND, Fort Worth; JOSEPH E. McDONALD, San Antonio; GROVER C. FOX, Tell.

To Fort Riley for instruction, Major FREDERICK J. COMBE, San Antonio.

To Fort Sam Houston, Texas, for duty, Lieuts. JOSEPH E. JONES, Boyce; GEORGE S. BEATY, Guadalupe; CLARENCE R. MYRICK, Uvalde.

To report by wire to the commanding general, Southern Department, for assignment to duty, Lieut. FRED H. HODDE, Burton; from Camp Baker, Lieut. ALBERT A. JACKSON, Mexia.

To the inactive list, Major WALLACE RALSTON, Houston.

Utah

The following order has been revoked: *To Boston, Mass.*, Harvard Medical School, for instruction, from Fort Riley, Lieut. CHARLES E. BRAIN, Salt Lake City.

Vermont

To Army Medical School for instruction, Lieut. SIDNEY MITCHELL, Jr., Richmond.

To Camp Sevier, Greenville, S. C., for duty, Capt. GEORGE H. NEWTON, Cambridge.

To Fort Oglethorpe for instruction, Major HARRY T. SUMMERSGILL, Bennington.

Virginia

To Army Medical School for instructions, Lieut. JOSEPH J. LIGON, Lynchburg.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. SETH B. PERRY, Horsewell; from Army Medical School, Lieut. HARTWELL G. STONEHAM, Waverly.

To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Major ALLEN J. BLACK, Hollis.

To Fort Oglethorpe for instruction, Lieut. ROSCOE F. THORNHILL, Slate Mills, Va.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. CORNELIUS B. COURTNEY, Fairfax.

To Saltville, Va., for duty, Capt. CHARLES F. UPDIKE, Browntown.

The following order has been revoked: *To Camp Lee*, Petersburg, Va., from Camp Pike, Lieut. JOHN O. BOYD, Roanoke.

Washington

To Camp Bowie, Fort Worth, Texas, as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. JAMES R. COUCHE, Twisp.

To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Lewis, Capt. ERNEST L. BICKFORD, Seattle.

To Camp Lewis, American Lake, Wash., for duty, Lieuts. VICTOR PIRO, Cle Elum; WILLIAM W. BRAND, Rosalia.

To Fort Riley for instruction, Capts. CLINE F. DAVIDSON, HARRY H. HEWITT, Seattle.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieuts. LAWRENCE HOPKINSON, Aberdeen; CHARLES E. MONTGOMERY, Walla Walla.

To San Francisco, Calif., for instruction, and on completion *to Camp Cody*, Deming, N. M., base hospital, Capt. RICHARD T. BURKE, North Bend. On completion *to Camp Kearny*, Linda Vista, Calif., base hospital, Lieut. BURTON E. FLEMING, McCleary.

West Virginia

To Army Medical School for instructions, Lieut. JOHN E. MILLER, Widen.

To Camp Gordon, Atlanta, Ga., for duty, Capt. CHARLES A. CLEMMER, Weirton.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort McPherson, Lieut. WILLIAM P. LEWIS, Beckley.

To Camp Lee, Petersburg, Va., for duty, Capt. JULIAN W. ASHBY, Carbon.

To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES W. WIEHE, Wheeling.

To Fort Oglethorpe for instruction, Lieut. VICTOR L. GLOVER, Inwood.

To Hoboken, N. J., for duty, from Fort McPherson, Lieut. WATSON S. ROWAN, Omar.

Wisconsin

To Camp Beauregard, Alexandria, La., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. ANVIN EDGARL, Menominie.

To Camp Dodge, Des Moines, Iowa, base hospital, Capt. ARTHUR F. LYON-CAMPBELL, Florence.

To Camp Lee, Petersburg, Va., for duty, Lieut. RUDOLPH C. PFEIL, Milwaukee.

To Camp Pike, Little Rock, Ark., for duty, Lieut. RICHARD A. DREYER, Wheeler.

To Camp Shelby, Hattiesburg, Miss., as assistant to camp surgeon, from West Point, N. Y., Lieut. ARTHUR D. SMITH, Gilmanton.

To Cape May, N. J., base hospital, from Camp Pike, Capt. J. GURNEY TAYLOR, Milwaukee.

To College Station, Texas, for duty, from Houston, Capt. HUBERT S. STEINBERG, Milwaukee.

To Fort Riley for instruction, Capts. ARTHUR H. WINTER, Tomah; SYLVESTER R. HUTCHINS, Whitehall.

To Jefferson Barracks, Mo., for temporary duty, and on completion *to his proper station*, from Camp Pike, Lieut. FRANK H. RUSSELL, Neenah.

To Fort Myer, Ga., for duty, Lieut. CLARENCE N. SONNENBURG, Sheboygan.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. JOHN R. EASTMAN, Kenosha.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

New Officers Elected.—At the forty-seventh annual meeting of the medical society of the state of California, at Del Monte, April 15 to 17, the following officers were elected: president, Dr. Cornelius Van Zwaluwenburg, Riverside; vice presidents, Drs. John H. Graves, San Francisco, and Ferdinand Stabel, Redding; secretary, Dr. Saxton Temple Pope, San Francisco, and delegates to the American Medical Association, Drs. George H. Kress, Los Angeles, Oliver D. Hamlin, Oakland, and Victor G. Vecki, San Francisco. Santa Barbara was selected as the next place of meeting. The association adopted resolutions remitting the dues of members in the military service, and adopted plans for calling on all members of suitable age and otherwise available to tender their services to the government.

Personal.—Capt. Walter O. Howell, San Francisco, on duty at Camp Fremont, fell from a horse, May 23, fracturing his left femur near the hip joint.——Dr. Lewis Michelsen, San Francisco, has been appointed by the San Francisco Board of Health director of the branch office in the Underwood Building, succeeding Dr. Harry G. Irvine.——Dr. Walter Lindley, Los Angeles, who was operated on recently in the California Hospital, is reported convalescent.——Dr. Alfred Guido Rudolph Schlosser, Hollywood, has petitioned the Los Angeles Superior Court to legally change his surname to Castles.——Dr. Howard C. Naffziger has been placed in charge of the division of brain surgery in the Central Reconstruction Hospital, Fort McHenry, Md.——Dr. John W. Hanner has been appointed health officer of Sacramento, succeeding Dr. Gustavus C. Simmons, resigned.——Because of alleged disloyal utterances the New England Society, Oak-

land, at a recent meeting is said to have voted unanimously for the expulsion of Dr. Heinrich E. Franck from the organization.

COLORADO

Personal.—Dr. J. L. Tadlock, Palisades, has been appointed coroner of Mesa County, succeeding Dr. Arthur G. Taylor, who has entered the military service.——Dr. Edward W. Lazell, Denver, has returned after several months of service in French hospitals.

Licenses Revoked.—At its January meeting, the Colorado State Board of Medical Examiners revoked the license of Dr. Robert Ritchie Walker of Canon City, on the ground that he had been convicted of a crime involving moral turpitude. At its April, 1918, meeting, the board also revoked the license of Dr. Allen R. Ransom of Denver, on the following grounds: For the last seven months of 1917 he had been practicing in Colorado without a license; he had, during the same time, been in the employ of one E. J. Kellihan, who was not licensed to practice medicine in Colorado, and he had practiced as the partner of E. J. Kellihan, with whom he had entered into an agreement promising to divide fees which had been obtained for professional services.

CONNECTICUT

Personal.—After forty years of service, Dr. Charles E. Stanley has resigned as a member of the staff of the Connecticut State Hospital, Middletown, and his resignation is to take effect July 15.——Dr. Thomas F. Keating, Manchester, has recently returned from China where he has been engaged in government sanitary work.

New Home for Society.—The New Haven Medical Society has secured an option on the Townsend property, New Haven, and is raising a fund of $55,000 for the purchase of the property. The house will be used for general headquarters, meetings, and social gatherings, and will contain the library and reading room of the organization. In the near future it is proposed to erect a brick addition to the building as an assembly room.

New State Officers.—At the one hundred and twenty-sixth annual meeting of the Connecticut State Medical Society held in Hartford, May 15 and 16, under the presidency of Dr. Edward K. Root, Hartford, the following officers were elected: president, Dr. Charles J. Bartlett, New Haven; vice presidents, Drs. Frank E. Guild, Windham; James H. Kingman, Middletown; secretary, Dr. John E. Lane, New Haven; treasurer, Dr. Phineas H. Ingalls, Hartford; delegates to the American Medical Association, Drs. D. Chester Brown, Danbury, and John E. Lane, New Haven, and alternates, Drs. Max Mailhouse, New Haven, and Robert L. Rowley, Hartford.

DELAWARE

Honor Veteran Physician.—About fifty physicians of Wilmington gave a complimentary dinner to Dr. Henry J. Stubbs at the Hotel Dupont, April 25, to commemorate his completion of fifty years of active practice.

Personal.—Dr. T. H. Davis, superintendent of the Ferris Industrial School has sent in his resignation, to take effect June 1, and will practice in Wilmington.——Drs. Robert Ellegood and Michael Ostro have been appointed members of the board of health of Wilmington.

State Board Election.—At the annual meeting of the state board of health, held in Wilmington, the following officers were reelected: president, Dr. William P. Orr, Lewes; secretary and registrar, Dr. Abram E. Frantz, Wilmington, and pathologist, Herbert J. Watson, Wilmington.

DISTRICT OF COLUMBIA

"Podiatrists" to Be Licensed in the District of Columbia.—Podiatrists, commonly known as chiropodists and sometimes vulgarly called "corn doctors," can no longer practice their calling in the District of Columbia unrestricted. Congress has just enacted a law forbidding the practice of podiatry in the district except by persons who have passed such examinations concerning their fitness as the health officer of the district may prescribe. The health officer must conduct the required examinations. The law does not prevent licensed physicians from practicing "podiatry," nor podiatrists who have been practicing in the district for not less than one year at the time of the approval of the law. By the law, podiatry is defined as the surgical, medical, or mechanical treatment of any ailment of the human foot, except the amputation of the foot or any of the toes; but the podiatrist may not lawfully use other than local anesthetics.

Medical Society Creates a War Committee.—By resolution adopted May 15, the Medical Society of the District of Columbia constituted its executive committee a war committee. The committee was authorized to send to each active member of the society a questionnaire designed to elicit such information as may be necessary to determine which of the members should perform military service and which should remain at home to care for the civil population. The resolution impresses on the entire membership of the society the duty of responding promptly to the questionnaire, and on those members who may be selected by the war committee for military service, the importance of early applications by them for commissions in the medical service of the Army or the Navy. The entire organization of the society, and its personnel, were by the resolution offered to the American Medical Association to help in the campaign the association has undertaken at the request of the Surgeon-General of the Army and Navy to obtain adequate complements of medical officers for both services.

FLORIDA

Personal.—Horatio M. Parker has been appointed bacteriologist and chemist for the Jacksonville Board of Health.——Stewart G. Thompson, formerly of Kansas City, has taken up his duties as vital statistician of the state board of health.——Dr. Lawrence T. Galphin, Fernandino, has been appointed district health officer of the second district of the state board of health, succeeding Dr. Joseph E. Taylor, resigned.

State Meeting.—At the meeting of the state medical society at Tampa, May 16, the following officers were elected: president, Dr. Frederick J. Walter of Daytona; vice presidents, Drs. William P. Adamson, Tampa; H. Mason Smith, Chattahoochee; acting secretary, to serve during the absence of Dr. Graham E. Henson, Jacksonville, who is serving with the United States forces, Dr. W. H. Coffee, Winter Haven; treasurer and editor of the *Florida State Medical Journal*, Dr. William R. Warren, and delegate to the American Medical Association, Dr. John S. Helms, Tampa. Miami was selected as the next place of meeting.

IDAHO

Personal.—Dr. Susan E. Bruce, city health officer of Lewiston, has been reappointed a member of the state medical board.——Dr. Walter F. Pike, superintendent of the Blackford State Hospital, has resigned.

ILLINOIS

Service Flag Unfurled.—The Auxplaines Medical Society at its annual meeting, April 4, in Oak Park, unfurled a service flag with thirty-one stars.

Tablet to Commemorate First Medical College.—Acting on the advice of the Illinois centennial commission, Morgan County has erected a marker on the site of the first medical college in Illinois.

Personal.—Dr. Charles W. Miller, Peoria, has been appointed special medical health officer for the Camp Herring military zone which embraces the city of Peoria and adjoining townships.——At its annual meeting, May 5, the Illinois Public Health and Welfare Association elected Dr. John A. Robison, Chicago, president, and Drs. Wilbur H. Gilmore, Mount Vernon, and H. Nelson Heflin, Kewanee, vice presidents.

Chicago

Pathologist Wins Prize.—Harry Lee Huber, formerly pathologist in the University of Chicago, was awarded the Ricketts Prize, May 2, on account of his research work to determine new methods of treating tuberculosis. The prize consists of the income of $5,000 and is given in memory of the late Dr. Howard Taylor Ricketts.

College of Medicine of University of Illinois Adopts Quarter System.—The University of Illinois, College of Medicine, announces that beginning with June 3, it will operate on the quadrimester system. In this system there will be three terms of four months each calendar year. The courses will be so arranged that it will be possible for a student to enter the school at the beginning of any one of the three terms.

Personal.—Rollo K. Packard, for the last seven years superintendent of Washington Park Hospital, was given a banquet

by fifty-seven of his associates, April 29.——Dr. Homer V. Halbert has been elected president of the Empire State Society of Chicago.——Dr. William H. Burmeister, coroner's physician, has resigned to enter the military service.——Major Kellogg Speed, M. R. C., has been transferred from service with Base Hospital No. 12 to service with the 42d Division of the American expeditionary forces.

IOWA

Personal.—Dr. Walter A. Matthey, Davenport, was operated on at the Augustana Hospital, Chicago, for disease of the gallbladder.——Dr. Eli Grimes has assumed charge of the Des Moines Tuberculosis and Free Public Health Nursing Association.——Dr. Jay Crowley, Rock Rapids, is reported ill with scarlet fever.

New Officers.—At the meeting of the State Society of Iowa Medical Women, held at Fort Dodge, May 7, the following officers were elected: president, Dr. Jeanette F. Throckmorton, Chariton; vice presidents, Drs. Josephine M. W. Rust and Sarah A. Kime, Fort Dodge, and Rosa E. Lowder, Maquoketa; secretary, Dr. Nelle S. Noble, Des Moines, and treasurer, Dr. Jessie B. Hudson, Carroll.

LOUISIANA

Officers Elected.—At the thirty-ninth annual meeting of the Louisiana State Medical Society, held at New Orleans, April 16, 17 and 18, the following officers were elected: president, Dr. Wilkes H. Knolle, New Orleans; vice presidents, Drs. G. M. G. Stafford, Alexandria; Amedee Granger, New Orleans, and Albert E. Fossier, New Orleans, and secretary-treasurer, Dr. Paul T. Talbot, New Orleans. The following were elected as councilors of the respective districts: Drs. Paul J. Gelpi, New Orleans; Beverly W. Smith, Franklin; Joseph E. Knighton, Shreveport; Jesse L. Adams, Monroe; James J. Robert, Baton Rouge; E. M. Ellis, Browley, and Eugene L. Lecompte.

MARYLAND

Physician Convicted.—Dr. Chauncey T. Scudder, proprietor of a sanatorium at Arlington, is said to have been found guilty of furnishing morphin to an addict in violation of the federal law and to have been sentenced to imprisonment for three months.

Antituberculosis Association Meeting.—At the meeting of the state War-Time Tuberculosis Conference held in Baltimore, April 18, Dr. Henry Barton Jacobs, Baltimore, was elected president, Dr. C. Hampson Jones, vice president, and Drs. John S. Fulton, William T. Howard, Martin F. Sloan, William S. Thayer, Thomas Fell, J. Hall Pleasant, Roland Park, and Allen K. Krause were elected members of the executive committee.

Personal.—Dr. William N. Gassaway of Ellicott City has been appointed chief health officer of Howard County.——Dr. Winford H. Smith, superintendent of the Johns Hopkins Hospital, who has been working in the office of the Surgeon-General of the Army in Washington for the past ten months, has been commissioned a colonel in the medical corps.——An informal reception was given, May 14, in the chapel of Brown Memorial Church to Dr. Mildred Jenks, who will sail this summer for Canton, China. Dr. Jenks goes out as the representative of the Women's Missionary Society of Brown Memorial Church and will be resident physician at the David Gregg Hospital for Women and Children in Canton.——Dr. Stanley Mitchell has been appointed medical superintendent of the Franklin Square Hospital, succeeding Dr. W. Todd Turnehough, resigned to become chief surgeon of the Dupont Mills, Parrin, N. J.

MASSACHUSETTS

Free School on Public Health.—A free school on public health with sessions, May 28, 29, 30 and 31, has been arranged for by the committee on public health of the Massachusetts Medical Society in cooperation with the state and federal public health organizations. Among the subjects for discussion are water and sewage, public health laboratory, public health reports, specific diseases, industrial hygiene, child welfare and public health administration. On the evening of May 30 in Boston, Dr. W. W. Peters will lecture on "Public Health Education in China." Some of the best known men in public health work will address the various sessions.

Personal.—Dr. Richard C. Cabot, Boston, now in France as a member of Base Hospital Unit No. 6, has been made a full professor in Harvard University.——Dr. Edwin A. Locke has been appointed assistant professor of medicine in Harvard Medical School.——Dr. Algernon Coolidge has been appointed acting dean of the Harvard Graduate School of Medicine, succeeding Dr. Alexander S. Begg, Boston, now on duty with the U. S. Army.——Drs. Kallman M. Davidson, Albert Ehrenfried and Harry Linenthal, Boston, and Louis M. Friedman, New York, have been appointed the executive committee of the reorganized medical board of the Beth Israel Hospital, Boston.——Dr. Louis Lazarus, Worcester, was seriously injured in an automobile accident, April 21.

Secretaries for Physicians.—Following an inquiry among physicians as to the desirability of establishing a course for the special training of secretaries for physicians, Simmons College adopted a course of training for that purpose and in June the first class will complete the course. The course includes technical secretarial work, such as stenography, typewriting, filing, cataloguing and bookkeeping, and in addition, familiarity with the medical vocabulary, some language training and abstracting, courses in general chemistry, bacteriology and applied routine medical laboratory work. It is believed that these secretarial technicians will prove useful to hospitals, clinics and specialists who may have certain routine laboratory work, such as urine and blood analysis, culturing, and microscopic examination of pathologic specimens.

Meeting of Examining Physicians.—At the meeting of the Massachusetts Society of Examining Physicians at Lynn, April 26, the society voted to oppose the bill in the state senate which proposes to give the reeducation and rehabilitation of injured industrial workers to the state board of education. It was the sense of the society that such power should be conferred on the industrial accident board. The society elected the following officers: president, Dr. Frank E. Schubmehl, Lynn; vice presidents, Drs. Herbert H. Howard, Boston; Charles S. Benson, Haverhill; John E. McCartin, Boston; secretary, Dr. James H. Stevens; treasurer, Dr. John S. Phelps, and councilors, Drs. Frederick J. Cotton, Boston; Jonathan F. Edgerly, Lincoln; William P. Coues, Boston; Francis J. Hanley, Whitman, and Robert C. Gwin, Boston.

MINNESOTA

Ohage Resigns.—Dr. Justus Ohage, health officer of St. Paul for twelve years, resigned, April 19, after a hearing in the mayor's office, in which he refuted charges of disloyalty that had been brought against him.

MISSOURI

Conference on Military Medicine.—Under the auspices of the St. Louis Medical Society, the medical officers at Jefferson Barracks and the deans of the Washington and St. Louis Universities, a clinical conference on military medicine will be held in St. Louis, June 5, 6 and 7, with headquarters at the building of the St. Louis Medical Society, 3525 Pine Street. On the first day, the members will be escorted to Jefferson Barracks, where the surgeons will arrange for a general inspection of the post, drills, demonstrations at the examination barracks, and lectures on sanitation and infectious diseases. On the following days, clinical programs and lectures have been arranged at the Washington and St. Louis universities and at various city institutions. The object of the meeting is the immediate enrolment of physicians in the Medical Reserve Corps of the Army. Those expecting to attend are requested, at the earliest possible date, to notify the president of the St. Louis Medical Society, 3523 Pine Street, St. Louis.

NEW YORK

For Protection of Watershed.—Governor Whitman has signed the bill passed in the legislature for the protection of the Croton watershed from which the water supply of New York City is derived. This bill aims to prevent pollution of the watershed by state institutions which are to be established in the water collecting area. The sites for the New York State Training School for Boys and the Mohansic State Hospital, Yorktown, will be located elsewhere.

New York City

New Traffic Rule for Physicians.—The first of several new traffic rules which Deputy Commissioner John A. Harris is planning to put into effect this month became operative, May 15. This ordinance authorizes the issuing of special cards to physicians, which will permit their motor cars to stand in crowded streets when on urgent medical calls.

Personal.—Dr. Antoine Depage has embarked for this country and expects to arrive at an American port within a few days.——Dr. Alexis Carrel of the Rockefeller Institute has been promoted by the French government to the rank of commander of the legion of honor.——Dr. Benjamin T. Terry has resigned his position as director of the Brooklyn Laboratories of Pathology.

Army Takes Sea-View Hospital.—An agreement was reached, March 15, between Health Commissioner Royal S. Copeland, Mayor Hylan and Lieut.-Cols. Hornsby and Kramer, under which the army will take over Sea-View Hospital, which has been conducted as a home for tuberculosis patients. The government will take possession as soon as the patients can be removed to the city's hospital at Otisville, N. Y., where the Army has agreed to erect additional buildings for the city.

Commissioner Copeland Confers with Federal Health Officials.—A conference was held, May 15, between Dr. Royal S. Copeland, the new health commissioner of New York, and Surg.-Gen. Rupert Blue of the Public Health Service, Acting Surg.-Gen. Col. James W. Furbush of the Army, and Surg.-Gen. William C. Braisted of the Navy, as a result of which the health department has announced its intention of giving its full cooperation to the national health service. The federal authorities have been assured that there will be no lowering of the standards of health conservation in New York. It was distinctly stated by Dr. Copeland that the policy of disorganization, retrenchment and the substitution of talent of lesser efficiency would not be permitted to continue.——Commissioner Copeland has announced the appointment of Dr. S. Dana Hubbard of the department of epidemiology, to take charge of the bureau of public health education temporarily, after May 15, when Dr. Charles F. Bolduan's resignation goes into effect. He has also appointed a committee consisting of Dr. Louis I. Harris, head of the bureau of preventable diseases; Dr. Alonzo Blauvelt, assistant sanitary superintendent, and Dr. B. Franklin Knause, Brooklyn, deputy health commissioner, to investigate and report on the handling of industrial sanitation in the health department itself.

NORTH CAROLINA

Personal.—Dr. Albert Houck, for ten years assistant physician to the Morganton State Hospital, has resigned. The cause of his resignation is said to be his pro-German sympathies and utterances.

Hospital has New Home.—The Presbyterian Hospital, Charlotte, has moved from its old buildings in the business portion of the city to its new home which is located in a 20-acre oak grove. The hospital has seventy private rooms and is thoroughly equipped.

OHIO

Training for Speech Correction.—It is announced that, during the next year, Cleveland will spend $10,000 to install in its public school system instruction in the correction of defects in speech.

Licenses Revoked.—At a meeting held April 2, the Ohio State Medical Board revoked the licenses of Drs. Robert Austin Browne and Frank Llewellyn Bowsher, both of Akron, for extravagantly worded and dishonest newspaper advertising. May 6, for a similar reason, the board also revoked the license of Dr. Franklin Stuart Temple, formerly of Toledo. Dr. Browne had advertised "quick results" for "weak, worn-out men," Dr. Bowsher had advertised himself as "Akron's reliable specialist," and Dr. Temple was proclaiming himself as a magnetic healer and had conducted a public clinic in the opera house at Lorain. Action was taken under the law which makes it illegal for a licensed practitioner to issue advertisements intended, or having a tendency, to deceive and defraud the public.

PENNSYLVANIA

Personal.—Dr. Samuel H. Ensminger, York, who has been ill in Philadelphia with an infection of the arm, has returned convalescent.——Dr. Thomas A. Taylor, Pomeroy, who has been seriously ill, has recovered.——Dr. John A. Fell has been reappointed a member of the Doylestown Board of Health for the twenty-fifth consecutive term.——Dr. Jane R. Baker, West Chester, has been appointed a trustee of the state hospital for chronic insane, Wernersville.——Dr. George W. Neff, Masontown, has been elected president of the board of trustees of the Cottage State Hospital.——Dr. Edwin S. Dorworth, Bellefonte, recently suffered a slight cerebral hemorrhage.

Philadelphia

Obstetric Society Meeting.—The fiftieth anniversary of the Philadelphia County Obstetrical Society was celebrated, May 17. The progress of obstetrics was reviewed and the men eminent in this domain of medicine were pointed out. Photographs of the prominent pioneers of obstetrics and gynecology were shown and their achievements were outlined by various speakers. Addresses were made by Drs. Barton Cooke Hirst, president of the society; Edward E. Montgomery, C. E. Githens, George M. Boyd, Richard C. Norris, B. F. Bear and Edward A. Schumann. Among the guests at the anniversary meeting were several members of the American Gynecological Society, which held its annual meeting also in this city, May 16, 17 and 18, inclusive. Dr. George W. Kosmak, New York, editor of the *American Journal of Obstetrics*, reviewed in abstract the early publications of the obstetric society as published in the *Journal*.

CANADA

Decoration for Medical Officer.—Col. Harvey G. Young, St. Mary's, was recently granted the D. S. O. for establishing an advanced post under a heavy barrage fire and successfully evacuating more than 400 wounded men.

Ten Gallons of Liquor Allowed to Physicians.—By a recent amendment to the Ontario temperance act, it is provided that a physician may keep 10 gallons of liquor in his private house, office or dispensary, despite anything to the contrary which may appear in the act.

New Officers.—At the annual meeting of the Niagara District Medical Association held in Niagara Falls, April 29, Dr. William K. Colbeck, Welland, Ont., was elected president; Dr. Charles E. Duggan, St. Davids, Ont., vice president, and Dr. Harry D. Cowper, Welland, Ont., secretary-treasurer.

Health Bulletin Withdrawn.—The Toronto Academy of Medicine, at its last meeting adopted a resolution expressing regret at the withdrawal of the *Health Bulletin*, issued by the department of health of the city of Toronto and expressing its appreciation of the value of the *Bulletin* to the citizens of Toronto.

Medical Officers for Military Districts.—The medical orders for the Toronto military district have been compiled and approved by Col. H. C. Bickford. The orders furnish complete instruction to the military surgeons and explicit rules relative to soldiers sick while on pass or furlough. Lieut.-Col. Edward S. Ryerson, Toronto, is director of military service; Lieut.-Col. Charles Carter, Hamilton, Ont., is in command of the hospitals; Major G. S. Fowlkes is in charge of the administration of medical service; Capt. S. J. H. Maywood is in charge of medical practice, and Lieut.-Col. John W. S. McCullough is in charge of sanitary work.

Hospital News.—A hospital is to be built in Halifax, N. S., for the American Red Cross. It will be for soldiers and sailors of the United States who may become ill in that port or who may be brought there needing treatment. It will be situated near the Nova Scotia Hospital.——The St. Thomas (Ontario) Medical Association have asked the board of governors of the Amasa Wood Hospital of that city to take the institution out of the hands of the city council, place it in trust, and have its capacity increased.——The board of governors of Notre Dame Hospital, Montreal, intend to build a million-dollar hospital. Construction will be begun before the end of the war.——The Montreal Presbyterian College and the David Morrice Convocation Hall in connection therewith have been handed over to the military for the purposes of a hospital for returned soldiers.

Personal.—Major Kenneth McCormack, C. A. M. C., has had conferred on him the D. S. O.——Capt. Dimrock Stanley Cassidy, R. A. M. C., Winnipeg, is the recipient of the Military Cross.——Lieut.-Col. Robert M. Simpson, Winnipeg, assistant director of medicals, after returning to France, has been gazetted colonel.——Major John E. Coulter, M.D., has been made president of a traveling medical board in England.——Capt. Freer Richardson, of the Canadian Medical Service, London, England, who was in Bagdad in charge of the army hospital, has been transferred to Mesopotamia.——Capt. D. M. Warren resigned recently from the R. A. M. C. and has been granted a commission in the C. A. M. C., and appointed to the King's Red Cross Hospital, Bushey Park, England.——Capt. Donald G. McKay, C. A. M. C., Bradford, Ont., who was gassed while serving in the trenches, has returned to Canada.——Capt. Cleveland Roy Wilson, Toronto, on the staff of the hospital for sick children, is on his way to the front.——Majors J. Cameron Wilson, London, Ont.; G. C.

Halle and John G. Hunt, Fort William, are returning to Canada. Major Hunt has served with the Russian army in Russia and Roumania.——Surg.-Gen. Henry M. Featherstone, of the Anzacs, is visiting in Ontario, on a tour of the military hospitals, to gain information on the best methods of handling the returned soldier problem so as to apply them in Australia.

GENERAL

Climatologists Meet.—The thirty-fifth annual meeting of the American Climatological and Clinical Association will be held in Boston, June 5 and 6, under the presidency of Capt. J. Elliott, C. A. M. C., Toronto, Ont. The session of the association will be held at the Boston Medical Library, the Fenway.

Coming Meetings.—The American Public Health Association will hold its next meeting in Chicago, from October 14 to 17, inclusive. The principal topic of the meeting will be "The Health of the Civil Population in War Time."——The National Tuberculosis Association, under its new name, will meet in Boston, June 6, 7 and 8. The headquarters will be at the Copley-Plaza Hotel.

More Nurses for the Navy.—The Committee on Public Information, division on woman's war work, issues the following: The Nursing Corps of the United States Navy is cooperating with the Red Cross in its drive to increase the enrolment of nurses. Secretary Daniels appeals to the women of the country to aid this branch of national defense by offering their services and taking advantage of the facilities for training offered during the summer by the Vassar Training School for Nurses.

Teaching Fellowships Available.—It is announced that a number of teaching fellowships in pediatrics are open to students in the University of Minnesota Graduate School, to which a stipend of $500 for the first year is attached, the amount being increased later. Men above the draft age will be taken, and a splendid opportunity is afforded to men who wish to make a specialty of pediatrics. Further information about these fellowships may be obtained from Dr. Julius P. Sedgwick, head of the department of pediatrics, University of Minnesota.

Conference of Public Health Officials to Be Held in Washington.—The annual joint conference of the United States Public Health Service with state and territorial health officers, will be held in Washington, June 3 and 4. The sanitation of extracantonment areas will be one of the chief subjects on the program. Reports will be made as to the success of the cooperative arrangement developed during the past year for preventing the interchange of disease between civil and military populations. Among the subjects to be discussed are the relation to public health of industrial hygiene and sanitation, especially in war industries; the care of the health of tuberculous soldiers on their return to civil life; the use of records of drafted men for public health purposes; effects on the public health of the forthcoming shortage in the medical profession. Among the subjects not so closely related to the war are: the securing of better morbidity reports, and the question of pure water supplies for railroads. There will be reports of standing committees in regard to many of the subjects outlined above and in regard to the sanitation of public conveyances, rural sanitation, and increasing the efficiency of the conferences. The sessions will constitute the sixteenth annual conference of state and territorial health authorities with the United States Public Health Service.

FOREIGN

Asylum for Orphans of Physicians in Spain.—About a year ago the authorities in Spain decreed the foundation of an orphan asylum for orphans of physicians. The plan included the compulsory organization of the profession throughout the country into district *colegios medicos*, and also the use of a stamp to be affixed to all medical certificates, death notices and similar papers to be made out by physicians. The expense of the stamps is to be borne by the patient or his family, except in the case of paupers, for whom special provisions are made. The orphan asylum is to be known officially as the Colegio de huerfanos de la clase medica, or the Colegio del Principe de Asturias. The building for the purpose is nearly completed.

Physicians in the Spanish Parliament.—The *Siglo Medico* expresses regret that so few physicians seek to be nominated to the lower house. With a little effort, the profession could have a strong representation in the Chamber of Deputies, and could influence public health legislation. In the senate, the profession is well represented as there are a number of physicians who are life members, and the ex-ministers are ex-officio members ,while the universities are entitled to elect a representative to the senate, and also the Real Academia de Medicina. The latter has recently selected Dr. L. O. Morejon for this position, and the Universidad Central has elected Dr. A. Espina, one of the editors of the *Revista de Medicina y Cir. Practicas.*

CORRECTION

Chicago News.—Last week, it was stated that Dr. Haim I. Davis had been appointed assistant physician of the county psychopathic and detention hospital. This should have been attending physician.

LONDON LETTER

LONDON, April 30, 1918.

Saving the Wounded in the Retreat

During the German advance in the present offensive, the evacuation of the dressing and clearing stations was a difficult task. They were situated as far forward as Ham, Cagny and Noyon in the Fifth Army area, and at Tincourt, Ytres, Grevillers, and Achiet-le-Grand in the Third Army area. That at Ham fell back to Villers-Carbonnel, but was able to stay there only one day, for already Villers-Carbonnel was under shell fire, and it was obliged to take to the road again to Amiens, and thence again to fall farther back. The hospitals at Cagny and Noyon, owing to the interruption of the railway and roads, could not fall back in the army area, and had to go southward into French territory to the region of Compiègne. By the evening of the first day the hospitals at Tincourt and Ytres were on the move. That at Crevillers was evacuated on the second day. At Achiet-le-Grand, where two hospitals were located on the night of the 21st, shells began falling, and in one eight orderlies were killed and the operating theater was destroyed. The hospitals fell back to Puchevillers, only to be bombed there that night. By the second day, therefore, all the clearing stations were back, or moving, to the second line positions, namely, beside those in the French area, at Roye, Maricourt, Edgehill (near Dernancourt) and Aveluy. None of these places, however, afforded more than a temporary resting place, and again journeys had to be resumed to a series of positions farther back. Every patient from every station was got away. The narrowest escape from losing patients was at Roye, where the hospital stayed on till March 26, and then had to go in a hurry, leaving seventy patients behind, with an officer and twelve orderlies to look after them. Some motor ambulances were met, and urged to go back and make a final effort to get the patients off. They did so, and as the last ambulance left with the last batch of patients it was fired on by the advancing Germans with their rifles. The method of evacuation was, as far as time permitted, extremely orderly and thorough, so that as little as possible was left to the enemy. All stations had nursing sisters on their staffs, and one sister was killed and one wounded. The regular procedure was, however, for the nurses to be moved first on an ambulance or lorry. Then every patient who could walk had to take the road on foot. The severely wounded were loaded on ambulances, and the staff then turned to the work of destruction or salvage before following. The huts in most cases were destroyed, the tents either taken away or burned. All medical stores and appliances, roentgen-ray apparatus, etc., were saved; only some heavy things, such as sterilizing plants, being impossible to move, as well as iron beds and in some cases bedding were left. All surgical instruments were, it is believed, saved, the medical officers in several instances having to put them on wheeled stretchers and trundle them along the roads at night. Some were so worn out with the ceaseless care of wounded and marching that they swayed about the road like drunken men. A clearing station is practically a hospital with from 1,000 to 1,500 beds, and therefore impossible to remove in a few hours; but an organization has been perfected by which a portion constituting a complete unit of 200 beds, with patients, staff and appliances, can be moved immediately on a very small number of lorries. Ahead of the general exodus went this selected portion, which was established and already at work on a new site before the later detachments arrived. So there was a minimum disarrangement in the care of the wounded, and at the end, when all the hospitals finally reached the rearmost positions, the wounded appeared not to have suffered at all, but would have been regarded as good cases, measured by the standard of ordinary batches as they come from the battlefield.

The Treatment of Shell Shock

The large number of men discharged from the army because of shell shock presents a new problem. They have been treated in a long series of military hospitals, where every effort has failed, and finally they have been sent out into the world physically sound but mentally broken down, incapable of work and unfit even to go home to their families. Like many other new problems presented by the war, experience and energy have solved this one. Special hospitals have been established for the treatment of such men with excellent results. The patient is first put to bed in a room alone and the physician brings mental influence to bear on him, for drugs are of little use. He is encouraged to regain his lost will power. The next step is to put him in a room with suitable companions and rouse his interest in things outside himself. At first he is very unsociable because he has lost self confidence; but sooner or later he begins to mix with his fellows and then plays billiards, cards, or other games. In the gymnasium, systematic exercises are then performed under an instructor. Various forms of work, of which carpentry and bootmaking are the most popular, are next undertaken. At first the patients work only an hour in the day, then two, and so on until six hours are attained. Other trades taught are engineering, electric light work, motor construction, and intensive gardening. Two thirds of the patients return to their former work, and one fourth are made useful workers in some other line. Thus complete recovery takes place in eleven out of twelve cases.

Prosecution for Quackery Under the Venereal Diseases Act

For the first time in England, unqualified persons have been prosecuted for quackery. Until the passage recently of the act for the prevention and treatment of venereal diseases, any quack or nostrum vender was at liberty to advertise his claims to treat any disease with impunity. But when the government decided to go to the expense of providing free treatment for venereal diseases, it also decided not to tolerate the competition of quacks, and made it illegal for unqualified persons to profess to treat them, though they still have full play as regards other diseases. James Walker, Harry Key and Fred Waite were convicted before two justices for advertising in a public urinal to treat venereal diseases. A handbill to this effect in the name of the "Curtis Medical Laboratory" of Hill Street, Birmingham, was found affixed to the wall. Waite, who described himself as manager of the company, had his attention drawn to the bill by a police officer. He said that "those things were in the hands of the advertising agents and they had it in their power to carry everything out"; but he declined to give their names. The defendants were convicted, and fines of $250 were imposed. An appeal against the conviction was made and the case came before three judges. The lawyers for the defense contended that there was no evidence that any of the three had committed the offense. The appeal was dismissed.

A Sexual Offenses Bill

Lord Beauchamp has introduced into the House of Lords a sexual offenses bill which makes it an offense punishable by two years' imprisonment for any person suffering from venereal disease in a communicable form to have, to solicit or to invite intercourse with another person, or wilfully to communicate such disease to another person, provided that no one shall be convicted who proves reasonable grounds for believing that he or she was free from communicable disease at the time. To ascertain whether any person, convicted of any offense, which under this clause would be caused or aggravated by the existence of communicable venereal disease, is in fact so suffering, the court may order the offender to submit to medical examination. If the offender is a female she can elect to be examined by a woman physician. False accusations are punishable by heavy fines or imprisonment. Clause 2 forbids prostitutes and night walkers to loiter in thoroughfares for prostitution or solicitation. Clause 3 stiffens the penalties against brothel keepers and the like. Clause 4 imposes a fine for allowing premises used for public entertainment to be the habitual resort, for whatever purpose, of reputed prostitutes. Another clause forbids the display or transmission of any picture or printed or written matter of an indecent or obscene nature, including any advertisement which relates to venereal disease, nervous debility, or other complaint arising out of or relating to sexual intercourse, or which suggests directly or indirectly, either the taking of anything for the purpose of procuring abortion or the use of any premises for an immoral purpose.

PARIS LETTER

Paris, April 18, 1918.

Special Commission for Surveillance of Outcome of Nervous and Mental Disease in Soldiers

Conforming to the plan adopted December, 1917, at the reunion of the chiefs of the centers of neurology and psychiatry and by the Société de neurologie, the undersecretary of state for the Service de Santé militaire has decided on the creation of a special commission for supervision of the results of treatment of nervous and mental disease in soldiers. This commission is charged with the technical control of the neurology and psychiatry centers, and also the solution of medicolegal questions in debatable and rebellious neurologic or psychiatric cases (convalescence, temporary or permanent invaliding, military sanctions, etc.). The committee is called to functionate principally for cases treated in the special centers for functional reeducation and exceptionally for other cases which will be submitted by the undersecretary of state for the Service de Santé militaire. As a rule, the commission will examine on the spot the cases referred to them. The commission is composed of Drs. Achille Souques, médecin des hôpitaux de Paris, Ernest Dupré, professor agrégé à la Faculté de médecine de Paris, et médecin des hôpitaux, Henri Claude, professor agrégé à la Faculté de médecine de Paris et médecin des hôpitaux, and Dr. Froment.

Assignment to Their Home Cities of Physicians in Army Service

As a general rule, mobilized physicians should not be assigned to their home cities. This is merely a matter of justice; it would be unjust if these doctors in military service were stationed in their home town and allowed to continue with their civil practice. This would be greatly to the disadvantage of colleagues mobilized elsewhere. An exception to this rule was, however, made recently in favor of the doctors of the classes of 1887 and 1888 (i. e., those 50 and 51 years of age). However, inasmuch as this privilege has given rise to abuses, the undersecretary of state for the Service de Santé militaire has decided that in order to avoid future abuses: 1. No doctor is to come back to his own city, unless there is a vacancy in his grade. 2. Each assignment shall involve the departure of one physician from the place; no service shall be created, no service shall be divided for the purpose of creating a new post, except when new necessity arises for doing so. 3. Each doctor designated for the civil population of his home town shall be given an unlimited furlough, without pay, unless at the same time he should happen to be in charge of a sanitary formation service or of a *corps de troupe*.

Remuneration for Interns

In conformity with a report made by M. Henri Rousselle, member of the city council, the municipal council of Paris has decided that beginning with January, 1918, and ending with the war, the pay of hospital interns and pharmacists shall be increased by 1,000 francs ($200).

Prize Awarded by the Paris Faculty of Medicine

The council of the Faculté de médecine has decided to award the Chateauvillard prize for 1918 to Dr. E. Velter, the author of a work on war surgery, "Penetrating Wounds of the Head by War Projectiles." Dr. Velter is a former intern of the hospitals of Paris, chief of the laboratory of clinical ophthalmology of the Faculty. This article had already received the Godard prize for 1917 of the Academy of Medicine.

Evening Consultations for Venereal Disease

The municipal council of Paris has decided to institute at l'hôpital Saint Louis a service for evening consultations for venereal diseases. A sum of 20,730 francs has been appropriated for the installation and maintenance of this service for 1918.

Thermometer for the Blind

Many kinds of apparatus may be had which enable the blind to do with their fingers what those who can see do with their eyes. To date, no "digital" thermometer, that can be read with the fingers, has been invented. A number of blind men have entered on the practice of professions in whose pursuit it is necessary to know the exact temperature record. Therefore, the Association Valentin Haüy pour le Bien des aveugles (9, rue Duroc, Paris) has offered a prize of 1,000 francs for the best apparatus which will enable the blind to read temperatures.

Deaths

Capt. Richard Lawrence Jett, M. R. C., U. S. Army, Cleveland; Jefferson Medical College, Philadelphia, 1907; aged 32; formerly a member of the Ohio State Medical Association; a member of the medical staff of the Babies Dispensary and Hospital, Cleveland, was killed in action, April 13. In 1905, he became a member of the British field hospital for Serbia, where he was commended for his bravery during the Serbian retreat, and commissioned captain in the Serbian army; later when the war broke out between America and Germany, he returned to this country and was commissioned a captain in the Medical Reserve Corps, becoming attached to the British expeditionary forces in France; later he was appointed a medical officer of the battalion and had just been cited for three decorations in connection with his work in Serbia.

Died in the Service
IN FRANCE
CAPT. RICHARD L. JETT, M. R. C.,
U. S. ARMY, 1886-1918

Isaac Adler, New York City; University of Heidelberg, Germany, 1871; aged 68; formerly a Fellow of the American Medical Association; a member of the Association of American Physicians, the American Gastro-Enterological Association, the New York Neurologic Society, the American Association of Pathology and Bacteriology, the New York Pathologic Society, the American Society of Clinical Investigation and the New York Academy of Medicine; professor of clinical pathology at the New York Polyclinic Medical School; consulting physician to the Polyclinic, German, Beth Israel and People's hospitals, and to the Montefiore Home; died at his home, May 4.

Benjamin M. Worsham, El Paso, Texas; University of Louisville Medical Department, 1886; aged 55; a Fellow of the American Medical Association; a member of the El Paso Civil Service Commission; assistant superintendent of the State Lunatic Asylum, Austin; superintendent of the Southwestern Insane Asylum, San Antonio; superintendent and later supervisor of construction of the State Epileptic Colony, at Abilene; died suddenly at his home, May 2, from heart disease.

Capt. Henry Clement Welker, M. R. C., U. S. Army, Norristown, Pa.; University of Pennsylvania, Medical Department, Philadelphia, 1906; aged 38; formerly a Fellow of the American Medical Association; formerly director of the roentgen-ray laboratory at the Episcopal Hospital, Philadelphia; on duty with Base Hospital Unit 34, of the Episcopal Hospital; was brought home, ill, from France, to Washington, D. C., and died at the Government General Hospital, May 1.

Capt. Richard C. Hill, M. R. C., U. S. Army, Irondale, Wash.; Cincinnati College of Medicine and Surgery, Cincinnati, 1892; Medical Faculty of McGill University, Montreal, 1906; aged 50; a member of the Royal College of Surgeons, England, in 1906; a member of the Washington State Medical Association; died, April 18, following an operation.

Major Thomas Connally Cowan, C. A. M. C., London, Ont.; Trinity Medical College, 1883; University of Toronto Medical Department, 1892; formerly president of the medical board of the London mobilization center; he was active in military work and former commanding officer of the 15th Field Ambulance; died at his home, May 5.

Capt. Albert Leslie Grubb, M. R. C., U. S. Army, Berkeley Springs, W. Va.; Barnes Medical College, St. Louis, 1903; aged 37; a Fellow of the American Medical Association; died, March 30, from acute dilatation of the heart, while aboard an Atlantic liner, en route to France, with a contingent of American soldiers.

Died in the Service
IN FRANCE
LIEUT. JOHN D. ARNETT, M. R. C.,
U. S. ARMY, 1889-1918
(See The Journal, May 18, p. 1484)

Walter E. Reily, Fulton, Mo.; Homeopathic Medical College of Missouri, St. Louis, 1896; aged 47; a member of the Missouri Institute of Homeopathy, American Institute of Homeopathy; a member of the American College of Surgeons; died at his home, about May 2, from pneumonia.

Henry Merryman Wilson, Baltimore; University of Maryland, Baltimore, 1850; aged 89; a Fellow of the American Medical Association; formerly served as president and secretary of the Medical and Chirurgical Faculty of Maryland; died at his home, May 8, from senile debility.

Lieut. John Raymond Wood, M. R. C., U. S. Army, Hallock, Minn.; Hahnemann Medical College and Hospital, Chicago, 1911; aged 30; a Fellow of the American Medical Association; died, February 3, from pneumonia, at the base hospital, Fort Sam Houston, Texas, where he had been on duty.

Henry Normanton Chapman, St. Louis; Missouri Medical College, St. Louis, 1893; aged 51; a Fellow of the American Medical Association; a member of the St. Louis Pediatric Society; formerly a member of the St. Louis Board of Health; died at his home, April 25, from heart disease.

Simon Menno Yutsy, Ann Arbor, Mich.; University of Michigan School of Medicine, Ann Arbor, 1891; aged 61; instructor in osteology and demonstrator of anatomy in the University of Michigan; a specialist in diseases of the ear, nose and throat; died at his home, May 3.

Gustav Adolph Heidner, West Bend, Wis.; Rush Medical College, Chicago, 1888; aged 54; a member of the State Medical Society of Wisconsin; a charter member of the Wisconsin Surgical Society; founder of the Heidner Hospital, West Bend; died at Long Beach, Calif., May 3.

Addison Fitzhugh Sanders, Cincinnati; Miami Medical College, Cincinnati, 1898; aged 52; a Fellow of the American Medical Association; a member of the American Academy of Ophthalmology and Oto-Laryngology; was instantly killed, May 5, by being struck by an automobile.

Thomas Hollingsworth Andrews, Philadelphia; Jefferson Medical College, Philadelphia, 1864; aged 74; a veteran of the Civil War; surgeon to the outpatient department of the Pennsylvania and Howard hospitals, Philadelphia; died at his home, May 8.

William O. Ensign, Rutland, Ill.; Wooster Medical College, Cleveland, 1869; aged 76; a Fellow of the American Medical Association; a member of the American Association of Railway Surgeons; a veteran of the Civil War; died at his home, May 8.

Rowland A. Postle, Ashville, Ohio; Medical College of Ohio, University of Cincinnati, 1884; aged 59; formerly a Fellow of the American Medical Association; died at the Hawkes Hospital, Columbus, Ohio, April 30, following an operation.

Charles Ogden Cartwright, Sacramento, Calif.; University of Michigan Medical School, Ann Arbor, 1889; aged 58; a member of the Medical Society of the State of California; died at the Krull Hospital, Sacramento, May 2, from paralysis.

David Gilbert Yates, New York City; New York University Medical Department, 1898; aged 47; a Fellow of the American Medical Association; a member of the American

Laryngological, Rhinological and Otological Society; a member of the New York Academy of Medicine; died at his home, May 9.

William Lewis Brosius, Gallatin, Mo.; Missouri Medical College, 1890; aged 64; a Fellow of the American Medical Association; a member of the American Roentgen Ray Society; formerly health officer of Daviess County; died in his office, April 18, from neuralgia of the heart.

George W. Bliss, Valley Springs, S. D., Hamlin University, Medical Department, Minneapolis, 1895; aged 49; a Fellow of the American Medical Association; for many years president of the school board; died at the Luverne Hospital, Luverne, Minn., April 29, from pneumonia.

Major John Henry Ratz, Preston, Ont.; University of Toronto, Faculty of Medicine, 1895; aged 48; was chief of the medical staff of the board of pension commissioners; formerly with Canadian Expeditionary Forces; died at his home, February 11, from myocarditis.

William Henry Manser, Burden, Kan.; Medical College of Ohio, University of Cincinnati, 1884; Kansas City Medical College, Kansas City, Mo., 1889; aged 59; a Fellow of the American Medical Association; died in St. Mary's Hospital, Winifred, Kan., April 23.

James Rundlet May, Portsmouth, N. H.; Jefferson Medical College, Philadelphia, 1866; aged 76; a retired officer of the United States Navy; he formerly served on the pension board and the school board of Portsmouth; died at his home, April 22.

Charles William Grootsch, New Orleans; Tulane University, Medical Department, 1903; aged 41; formerly a member of the city board of health, and assistant coroner for the parish of Orleans; died in the Touro Infirmary, New Orleans, May 7.

William James Hennessy, Palmyra, N. Y.; Syracuse University, Medical College, 1881; aged 61; a Fellow of the American Medical Association; health officer of Wayne County; died in the Lyons Hospital, Lyons, N. Y., April 27.

John Alexander Vincent, Springfield, Ill.; Eclectic Medical Institute, Cincinnati, 1868; aged 87; once mayor of Springfield; formerly a member of the Illinois General Assembly and of the state board of health; died at his home, May 16.

Reuben Wilson Walters, Chagrin Falls, Ohio; Cleveland Homeopathic Hospital College, 1873; Western Reserve University, Medical Department, 1867; aged 79; a veteran of the Civil War; died at his home, April 19, from pneumonia.

Major John Hastings Bell, M. R. C., U. S. Army, Arkadelphia, Ark.; Beaumont Hospital Medical College, St. Louis, 1892; aged 47; a Fellow of the American Medical Association; died at Fort Sill, Okla., March 4, from erysipelas.

John Chase, Denver; University of Michigan, Medical Department, Ann Arbor, 1881; aged 61; professor of ophthalmology and otology in the University of Colorado School of Medicine; died at his home, May 3, from pneumonia.

George Albert Williams, Brooklyn; New York University, Medical Department, New York City, 1879; aged 63; founder and director of the Bushwick Hospital, Brooklyn; died in that institution, May 11, from pneumonia.

Archibald Campbell, Flushing, N. Y.; Columbia University, College of Physicians and Surgeons, 1871; aged 76; formerly physician at Sanford Hall, Private Asylum, Flushing, N. Y.; died at the home of his brother, May 8.

Henry Dodge Nichols, Douglas, Ariz.; Miami Medical College, Cincinnati, 1897; University of Pennsylvania, Philadelphia, 1898; aged 46; died at the Calumet Hospital, Douglas, April 17, from pneumonia.

Benjamin Prince Earle, Charleston, Ky.; Hospital College of Medical Central University, Louisville, 1889; aged 71; a member of the Indiana State Medical Association; died at his home, May 1, from pneumonia.

Arthur J. Morris, Bloomington, Ill.; Hahnemann Medical College and Hospital, Chicago, 1891; aged 63; a member of the Illinois State Medical Society; died in the Kelso Hospital, Bloomington, April 23.

Thomas Jefferson Patterson, Visalia, Calif., University of California Medical School, 1882; aged 62; a member of the Medical Society of the State of California; died at his home, April 23, from heart disease.

John Andrew Freeman, Crestwood, Ky.; Louisville, Ky., Medical College, 1871; aged 66; a Fellow of the American Medical Association; died at St. Joseph's Infirmary, Louisville, April 26, from uremia.

Samuel D. Allen, Oak Harbor, Ohio; Homeopathic Hospital College,, Cleveland, 1885; aged 65; a member of the Ohio State Medical Society; died, March 4, from cardiovascular renal disease.

Richard Llewellyn Stoddard, Rochester, N. Y.; Albany Medical College, 1895; aged 48; formerly a Fellow of the American Medical Association; died in the Lee Hospital, Rochester, April 29.

John A. Stevens, Clinton, N. C.; Jefferson Medical College, Philadelphia, 1883; aged 58; a member of the Medical Society of the State of North Carolina; died at his home, February 12, from nephritis.

Abram S. Wilson, Bristol, Pa.; Jefferson Medical College, 1881; aged 67; a member of the Medical Society of the State of Pennsylvania; died at his home, about April 22, from cerebral hemorrhage.

William P. McNally, Bangor, Me.; McGill University, Faculty of medicine, Montreal, 1897; aged 52; a Fellow of the American Medical Association; died at his home, May 1, from pneumonia.

David Rosser, North Yakima, Wash.; Miami Medical College, Cincinnati, 1875; a member of the Washington State Medical Association; died at his home, April 23, aged 71, from paralysis.

Adelbert Dalton Atwood, Brooklyn; University of Buffalo, 1869; aged 68; formerly connected with the Brooklyn Board of Health Service; died at his home, April 28, from cardiac asthma.

James Addison Meriwether, Holcombs Rock, Va.; New York University, New York City, 1882; aged 65; a member of the Medical Society of Virginia; died at his home, April 30.

Lucius A. Walton, St. Louis; Washington University, Medical School, St. Louis, 1863; aged 77; a veteran of the Civil War; died at his home, April 28, from pneumonia.

Philip Pendleton May, Trevilians, Va.; Medical College of Virginia, Richmond, 1869; aged 73; a veteran of the Civil War; died at his home, April 29, from paralysis.

Mason Elias Henry, Pine Bluff, Ark.; Vanderbilt University, Medical Department, Nashville, 1912; aged 32; died at the home of his sister, Pine Bluff, La., April 26.

Henry Montgomery, Ypsilanti, Mich.; Michigan College of Medicine and Surgery, Detroit, 1904; aged 50; died at his home, March 2, from aortic insufficiency.

Uriah R. Shaeffer, Hummelstown, Pa., Jefferson Medical College, 1879; a member of the Medical Society of the State of Pennsylvania; died at his home, April 25.

James R. Hall, Carnesville, Ga.; Atlanta Ga., Medical College, 1892; aged 51; a member of the Medical Association of Georgia; died at his home, April 25.

Charles S. Phillips, Reading, Pa.; Medical-Chirurgical College of Philadelphia, 1895; aged 72; died at his home, April 29, from cerebral hemorrhage.

John W. Carmichael, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1886; aged 68; died at his home, May 2, from paralysis.

Thomas Alexander Brandon, Watford, Ont.; University of Toronto, Ont., faculty of medicine, 1911; aged 32; died at his home, April 27, from pneumonia.

Daniel Liberty Collom, Meadville, Pa.; Jefferson Medical College, 1876; aged 67; formerly a member of the city health board; died at his home, April 28.

Timothy Rose Grow, Lynn, Mass.; Hahnemann Medical College and Hospital, Chicago, 1877; aged 77; died at his home, April 22, from pneumonia.

William O. Bunnell, Wilkes-Barre, Pa.; Eclectic Medical Institute, Cincinnati, 1894; aged 50; died at his home, about April 20, from pneumonia.

George R. Baalith, Pittsburgh; Baltimore Medical College, 1906; aged 40; a Fellow of the American Medical Association; died at his home, March 4.

George Kent Colville, Pleasantville, Ohio; Ohio Medical University, Columbus, 1902; aged 51; died at the Grant Hospital, Columbus, April 23.

Elijah H. Gregg, Muncie, Ind.; American Eclectic Medical College, Cincinnati, 1887; aged 57; died at his home, April 26, from pneumonia.

Thomas Kennedy, Bermudian, Pa.; College of Physicians and Surgeons, Keokuk, 1874; aged 79; died at his home, April 29, from paralysis.

Lawrence Bryant Hathaway, Reinbeck, Iowa; Rush Medical College, Chicago, 1878; aged 64; died at his home, about March 17, from diabetes.

Elmore T. Applegate, Union City, Tenn.; Vanderbilt University, Nashville, 1883; died in Jonesboro, Tenn., April 19, from blood poisoning.

Arthur Joyal, Montreal, Que.; Laval University, Medical Department, 1883; aged 58; died at his home, February 6, from heart disease.

Andrew Allen Brown, Bangor, Me.; Bowdoin Medical School, Portland, Me., 1901; aged 42; died in Avondale, Ariz., about April 29.

John Paul Jackson, Norfolk, Va.; Southern Homeopathic Medical College and Hospital, Baltimore, 1895; died at his home, April 29.

Eli M. Downs, Columbus, Ohio; Starling Medical College, 1864; aged 80; died at his home, April 28, from cerebral hemorrhage.

Frederick Henry Parker, Auburn, N. Y.; New York University, Medical Department, 1881; aged 62; died at his home, recently.

David C. Fay, Ostrander, Ohio; Medical College of Ohio, University of Cincinnati, 1867; aged 74; died at his home, April 20.

John Wesley Shepard, Leoti, Kan.; Medical-Chirurgical College of Kansas City, 1904; died in a local hospital, April 25.

John A. Brown, Columbus, Miss. (license, Mississippi, years of practice); aged 80; died at the Columbus Hospital, April 25.

John Elmore Curtis, Waldron, Ind.; Kentucky School of Medicine, Louisville, 1888; died at a hospital in Indianapolis, April 28.

Simon H. Gump, Bedford, Pa.; University of Pennsylvania, Philadelphia, 1870; aged 71; died at his home, April 27.

Marriages

MAJOR GILES BURNESTON COOK, M. R. C., U. S. Army, Richmond, Va., on duty at Camp McClellan, Anniston, Ala., to Miss Olive Smith, at Washington, D. C., April 30.

LIEUT. ROBERT DOUGLAS SPENCER, M. R. C., U. S. Army, Philadelphia, to Miss Julia C. Butler of Hazelton, Pa., at Elizabeth, N. J., May 2.

HUNTER REECE MANN of Mardela Springs, Md., to Miss Constance Agnes Vandergrift of Charleston, W. Va., in Baltimore, April 28.

LIEUT. WALTER MAGRUDER LEONARD, M. R. C., U. S. Army, to Miss Ruth A. Ralston, R.N., both of Fosterio, Ohio, April 17.

LIEUT. JOHN EDWARD RUETH, M. R. C., U. S. Army, Sun Prairie, Wis., to Miss Beatrice Miars of Milwaukee, May 7.

WILLIAM KRAUSS of Memphis, Tenn., to Miss Margaret V. Curdy, formerly of Philadelphia, at Memphis, April 13.

CAPT. CLIFTON RODGERS DUDLEY, M. R. C., U. S. Army, to Miss Margaret Gleason, both of St. Louis, May 1.

BRICE WORTHINGTON GOLDSBOROUGH to Miss Margaret Craig Bayly, both of Cambridge, Md., May 8.

GEORGE WASHINGTON GUERINOT to Miss Ursula M. O'Grady, both of Rochester, N. Y., April 10.

CHARLES FRANCIS KING of McKeesport, Pa., to Miss Corinn Smith of Philadelphia, May 8.

MAX TISCHLER, to Miss Helen Micholosky, both of Wilkes-Barre, Pa., April 30.

VICTORIA MCLAREN MOORE to Lewis Earle Barnes, both of Chicago, May 13.

ARLEY GLENN EVERHART to Miss Emma J. Radtke, both of Chicago, May 11.

JOHN W. FAUST to Mrs. Zora Ray, both of Searcy, Ark., about April 23.

PAUL H. RUPP to Miss Clarice Engh, both of Milwaukee, April 18.

HERMAN HORN, to Miss Lillian Kanes, both of New York, April 28.

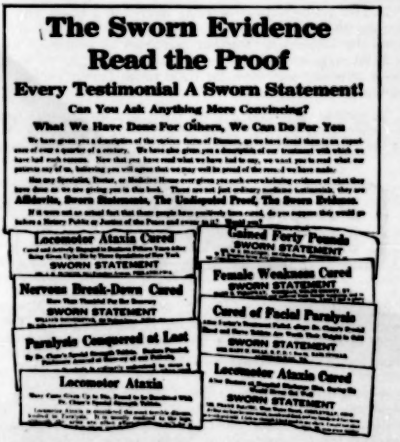
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE DR. CHASE COMPANY

A Fraud Order Closes the Mails to a Nostrum Concern

For many years one Kossuth E. Hafer of Philadelphia has been defrauding the sick by selling alleged cures for paralysis, locomotor ataxia, kidney disease and numerous other conditions. Hafer conducted his business under the trade name "The Dr. Chase Company." He sold three remedies—pills—which, before the Food and Drugs Act made lying on the label irksome if not expensive, were known, respectively, as "Dr. Chase's Blood and Nerve Food," "Dr. Chase's Kidney Food" and "Dr. Chase's Liver Food." As none of these pills could by the widest stretch of imagination be called a "food,"


The Sworn Evidence
Read the Proof
Every Testimonial A Sworn Statement!
Can You Ask Anything More Convincing?
What We Have Done For Others, We Can Do For You
Locomotor Ataxia Cured
SWORN STATEMENT
Gained Forty Pounds
SWORN STATEMENT
Nervous Break-Down Cured
SWORN STATEMENT
Female Weakness Cured
SWORN STATEMENT
Cured of Facial Paralysis
SWORN STATEMENT
Paralysis Conquered at Last
Locomotor Ataxia
Locomotor Ataxia Cured
SWORN STATEMENT

Some pages and parts of pages (reduced) from one of the Hafer booklets. Note the claims that the pills would cure paralysis, locomotor ataxia, etc.

the names were changed, after the "Pure Food Law" went into effect, from "food" to "tablets." In those halcyon days for nostrum makers when everything "went" and the advertising pages of the majority of publications were open to any advertiser who could pay for space, the Chase concern advertised in some magazines of comparative respectability. During the past few years, however, the advertisements seem to have been largely confined to those cheap weeklies and monthlies whose advertising income is mainly derived from the less reputable products of the advertising world.

The federal authorities have investigated Hafer's business, and, very naturally, concluded that he has been conducting a scheme for obtaining money by means of false and fraudulent pretenses, representations and promises. Henceforth the mails are closed to the Dr. Chase Company.

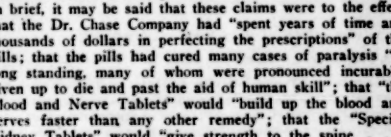
In his case with the government Hafer had for his attorney H. B. Thompson, the counsel for the "patent medicine" interests, the "Proprietary Association." It seems fitting that the legal light of the Proprietary Association should have come to the defense of the Dr. Chase Company, which, by the way, seems to have been a member of that organization. THE JOURNAL has, before this, called attention

to the fact that the membership of the Proprietary Association is secret and that, while it periodically protests that it and its members are *sans peur et sans reproche*, it is careful to prevent a general list of its membership becoming known.

Judge W. H. Lamar, the Solicitor of the Post Office Department, in his memorandum for the Postmaster-General recommending the issuance of a fraud-order, quotes quite fully from the claims made by Hafer in his advertising matter. In brief, it may be said that these claims were to the effect that the Dr. Chase Company had "spent years of time and thousands of dollars in perfecting the prescriptions" of the pills; that the pills had cured many cases of paralysis "of long standing, many of whom were pronounced incurable, given up to die and past the aid of human skill"; that "the Blood and Nerve Tablets" would "build up the blood and nerves faster than any other remedy"; that the "Special Kidney Tablets" would "give strength to the spine . . . stop all wasting of albumen through the urine, neutralize the uric acid, and relieve all rheumatic and sciatic pains"; that the "Liver Tablets" would "put the liver and stomach into such a perfect condition" that it would be impossible for those that took them to have sallow skin, foul breath, coated tongue, sour stomach, drowsiness after meals, constipation, etc.

In 1916 a Post Office Inspector interviewed Hafer and following this interview Hafer eliminated the word "paralysis" from the booklets he sent out (although he continued using it in his magazine advertisements) and substituted the phrase, "loss of power and strength." As Judge Lamar pointed out in his memorandum:

"A number of similar changes have been made with respect to other diseases; the paragraph relating to 'Gravel-Stone in the Bladder' has been omitted and promises of relief, while


PARALYSIS Conquered at Last.
Write for Proof.
By Dr. Chase's Special Blood and Nerve Tablets.
Dr. Chase, 224 N. Tenth Street, Philadelphia, Pa.

A typical advertisement. The one reproduced—slightly enlarged—appeared in the *Gentlewoman*, April, 1917. In 1916 Hafer had "hedged" on the use of the word "paralysis" in his advertising booklets—this following an interview with a post-office inspector. Violating the spirit of the law while making a pretense of keeping the letter is typical of the fraudulent "patent medicine" business.

conveying the same sense, have been made less positive on their face. These changes clearly show the intent of Mr. Hafer to conduct this fraudulent business while evading, if possible, the consequences of his infraction of the law. In his attempt to do this he has not hesitated to change the language of the affidavits reprinted by him in such a manner as to substitute for the names and descriptions of diseases therein other names and descriptions which he thought would pass muster."

The judge then states that the tablets sold by Hafer were composed of drugs well known to the medical profession and that the evidence demonstrated that these drugs, neither alone nor in combination, had the powers with which Hafer had endowed them. Continuing, the memorandum says:

"The holding forth of these tablets as curative, or even allevial, in all the conditions which may give rise to the symptoms enumerated, regardless of the condition of the patient or the cause of the trouble, is not only unjustified but flagrantly fraudulent. Some of the diseases from which these symptoms arise are incurable, some of them are only amenable to surgery, and many of them make no response whatever to drug treatment. According to the testimony adduced at the hearing in the great majority of these diseases these tablets are of no value whatever.

"Hafer, as might be inferred from the character of his representations, is entirely uneducated along medical lines.

"The business originated in his going to a chemical concern [The Wm. R. Warner Company, it is said.—Ed.] and having a tonic tablet made up in the business of selling which he intended to engage. He testified that at that time he had no intention of representing these tablets as of value in the various diseases which he included later in his advertising matter. This was done, according to him after persons to whom he had sold these tablets told him, that they had been cured of these various diseases. With no other basis for these claims, and little, if any, knowledge of the therapeutic value of those drugs, he proceeded to build up his claims without recourse to science or to experts along medical lines."

The memorandum further points out that if Hafer had been desirous of conducting his business honestly he would have sought knowledge regarding the value of these tablets from reputable sources of information, for he was put on notice several times as to the questionable character of his representations. He had, in fact, been cited before the Bureau of Chemistry for misbranding his stuff and modified his labels, which came under the purview of the federal Food and Drugs Act, but, as Judge Lamar points out, "at the same time he continued the same fraudulent representations to which his attention had been invited, in his advertising matter."

In 1917 Hafer was indicted for misbranding his preparations, pleaded guilty and was fined $250. "Under the circumstances," says the memorandum, "and in view of the evidence, I am constrained to hold that it was always his intention to go as far as he could in his claims for these tablets without regard to their actual value in the treatment of disease."

In view of all the findings, it was recommended that the Postmaster-General should issue a fraud order against the Dr. Chase Company. The mails were closed to the company, Jan. 17, 1918.

ADVERTISING PRINCIPLES—LAY AND MEDICAL

The Journal has received two letters, one from a physician who had written to the New York *Tribune* protesting against an advertisement of "Aspirin (Bayer)" that appeared in the rotogravure supplement of a Sunday edition and the other the New York *Tribune's* answer to the protest. The two letters make an editorial in themselves. Here is the letter of the physician—Dr. Edwin H. Shepard of Syracuse, N. Y.—which was addressed to the editor of The Journal:

"When a great daily newspaper takes a stand for honest advertising it seems worthy that acknowledgement should be made. On April 14 the illustrated Sunday supplement of the New York *Tribune*, together with many of the other papers of the country, published a duplicate of the enclosed advertisement of 'Aspirin.' Your own instructive editorial on 'Acetylsalicylic Acid, or What's in a Name?' had appeared in the copy of The Journal of the day preceding.

"Believing in the sincerity of the *Tribune* in its effort for honest advertising, I sent them a copy of your editorial together with the page of advertisement, also calling attention to the statements in the advertisement which seemed questionable. Among the questionable matters in the advertisement were the statements 'The one genuine Aspirin,' 'No other is genuine,' 'That which is genuine possesses qualities of excellence never found in imitations,' 'for your protection . . . every package and tablet is marked with the Bayer cross,' 'Your guarantee of purity,' and 'Refuse substitutes as they may prove ineffective and harmful.'

"The *Tribune* was requested to investigate into the standing of the Bayer company and its product. A few days later the enclosed letter was received from the paper's Bureau of Investigations."

And here is the New York *Tribune's* answer, signed by R. R. Baer, assistant director of that paper's Bureau of Investigations:

"We have your letter of April 14th, which was acknowledged on the 22nd, in re Aspirin. For your information: Our rotogravure supplement is printed a number of days in advance of the Sunday paper. When these copies which have already been printed are used, no further Aspirin copy will appear. This means a loss of some four pages."

How many of the numerous medical journals that are still carrying the "Aspirin (Bayer)" advertising would make such a financial sacrifice for mere principle?

Retain the Efficient Health Officer.—A tactful, energetic health officer can control the death rate in his locality provided he is given a few years to do it; but to expect great results in the time he ordinarily holds office is beyond power. —*Public Health* (Mich.).

Correspondence

BÁRÁNY CHAIR TESTS AND FLYING ABILITY

To the Editor:—In the article on "Bárány Chair Tests and Flying Ability" (THE JOURNAL, April 13, 1918, p. 1064), Parsons and Segar conclude with the statement that "the evidence, therefore, seems to point to an absence of correlation between equilibrium tests, as established in the Bárány chair, and actual flying ability."

While it is not clear just what impelled the writers to attempt "the correlation study of one hundred naval aviators," the article clearly implies to the medical reader unfamiliar with the principles underlying the tests of the internal ear that the Bárány test was intended to foretell the flying ability of the applicant tested. Just so far as this impression is conveyed by this article, the article is ill advised and untimely. It would naturally be as illogical and unwarranted to deduce that the aviator has no need of normal vision and eye muscle balance, on discovering that certain men who showed inaptitude at learning to fly possessed normal vision and eye muscle balance, as to make similar deduction concerning normal vestibular sense. The authors, in interpreting the examination of the vestibular apparatus as an attempt to determine the applicant's future proficiency under flying tutelage, have first formulated a hypothesis unheard of by the otologist, and then proceeded to prove it completely erroneous. Readers unfamiliar with the fundamental truths of the physiology of the internal ear and with the various methods of testing the vestibular apparatus are impelled to question the truth of teachings and tests in this comparatively new field of scientific medicine, and there is injected into their minds, by so raising doubts as to the soundness of these tests, a disquieting and disturbing element, quite unmerited by the scientific medical men who read to amplify their limited acquaintance with this apparently abstruse subject.

It is not impossible that this correlation study was intended as a psychologic research, in which case it would have been wise to make clear that such was the intention, and to publish it through the medium of a journal, the readers of which are psychologists and hence capable of recognizing psychologic research and placing proper construction on it.

Interest in the study of the vestibular function on the part of those as yet unfamiliar with it is particularly timely in this day of intensive development of great military air service. The general principles of labyrinthology are simple; the anatomic and physiologic details underlying them are somewhat complex; and a clear conception of the meanings of the tests is hardly to be expected to crystallize out of a few weeks or months of its study.

The writers introduce the subject of their article by saying, "Since the Bárány chair has been universally used by both the Army and the Navy in the selection of candidates for aviators," but they fail to state how long it is "since this chair has been used" in their service. This question cannot but be raised in the minds of those familiar with vestibular physiology by the second and third sentences in the article: "We knew, for instance, that trapeze performers and Russian dancers have very little, if any, nystagmus after whirling, and yet their proficiency in their performances depends on their sense of balance. We knew that men who have a so-called 'normal' nystagmus time before flying often lose all or a great part of it after numerous flights." These two statements have no foundation in truth. A scientific man who is familiar with this subject would need no actual tests to convince him of the unsoundness of such statements. However, tests have been made in the past of a large variety of whirling artists, in vaudeville, circus and dancing work, and in every case their responses to the standard stimulation of the vestibular apparatus were normal.

Epidemics of mumps among the flying schools have furnished opportunities of reexamining aviation cadets who had been tested previously, on the occasion of their admission into training, and had been found to have normal reactions to the vestibular stimulation. In some of these mumps cases both the cochlear and the vestibular functions were found to have been impaired seriously by the disease; in others, only the vestibular portion of the internal ear was found to have been affected. Special medical examinations have also furnished instances such as the following:

> An aviator, who had been examined and found to have normal responses to standard vestibular stimulation, and who had a record of months of successful flying on the west front, was finally noted by his flight commander to be flying progressively worse and worse, and experiencing greater and greater difficulties in making landings. At the instance of his flight commander he was sent to Major R. G. for special physical examination, and comparison with his former responses to vestibular stimulation showed a striking diminution in acuity of vestibular perception—from twenty-six seconds to seven seconds duration of nystagmus, and from three past pointings and proper falling to no past pointing and no falling. Further examination revealed syphilitic infection subsequent to his original vestibular tests.

It is not at all impossible that the cases coming to the knowledge of Parsons and Segar in which men having a so-called "normal" nystagmus time before flying lost all or a great part of it after numerous flights, were in reality similar to these just mentioned. It was unfortunate that accurate diagnosis of the cause of the loss in acuity of this special sense apparatus was not made and the details set forth in connection with allusion to the condition. Failing in this, the cases should not have been mentioned. This because, as the statement appears in the article, it is susceptible of only one interpretation, namely, that these men lost part or all of it after numerous flights solely because they had flown, which is plainly controverted by adequate available evidence showing the contrary to be true.

In saying, "it seemed to us, therefore, that for the most part the use of the chair has been taken more or less on faith after the following line of reasoning: A well defined sense of equilibrium is necessary for aviation. The Bárány chair determines the normality or abnormality of function of one's semicircular canals, which have to do with equilibrium. Therefore, by use of the chair, the sense of equilibrium of a candidate for aviation can be established. The question as to whether or not this line of reasoning is theoretically sound we are willing to leave to the otologists for argumentation," the authors make an assumption which is hardly in accord with the facts. One familiar with the work done on the labyrinth recognizes that it is merely a peripheral sense organ which, as Alexander C. Brown stated in 1876, "furnishes information of the change of aspect of the head in space." This normally has definite connections with the central nervous system by way of certain nerve paths and brain centers; the end-organs, nerve paths and brain centers constitute a special system or apparatus, which is commonly known as the vestibular apparatus. The semicircular canals may be determined to be functioning by standard tests, and yet there may exist a lesion preventing the normal operation of the vestibular apparatus.

Prior to the advent of neuro-otology, it would have been in the province of the neurologist alone to determine the location and character of such a lesion; the otologist, however, in dealing with the broad problems arising in the study of the vestibular apparatus, finds himself compelled to overstep the boundaries formerly confining his activities, and to avail himself of the information that otologic neurology places at his disposal.

The relative ability of an individual to utilize effectively the various special informations poured in on the central nervous system from all the special sense end-organs in no way could be conceived as falling within the province of otology or neuro-otology to determine.

It appears from the paper of Parsons and Segar that not all subjects examined have proved to be able to avail themselves of all the incoming special informations with equal facility; but it is not clear how it has been shown that the vestibular findings are specially involved. Until this has been pointed out, the relevance of their article is difficult to conceive.

Further allusion might be made to the incomplete data concerning those constituting the basis of this correlation study, particularly evidenced by the statement "unfortunately, all of these men had presumably passed a satisfactory Bárány

examination." But it does not seem justifiable to go further in elaborating the defects so glaringly present both in premise and in development of this article.

E. R. Lewis, M.D.,
Major, M. R. C., U. S. Army.
F. H. Pike, Ph.D.,
New York.

To the Editor:—When the work of examining candidates for commissions as fliers in the Aviation Section of the Signal Corps began, the ocular requirements were placed at as high a level as possible: to be brief, a pair of perfect eyes was demanded, and that standard has never been lowered. The phrase "a pair of perfect eyes" might be transposed to "a perfect pair of eyes," for not only were the various functions of each eye to be considered with the greatest care, but also the relation of each eye to the other was most completely studied. So stringent were the demands made, especially on the muscular balance, that one of America's best known ophthalmologists expressed the opinion that if they were adhered to there would be no aviators, a rather amusing statement when placed in juxtaposition with some of the recent articles on this subject, the writers of which seem to be hazy as to whether even a demand for two eyes is made.

It was felt that perfect ocular mechanism was none too good when the demands made on it were considered—the start from the ground, the needs of observation, the estimation of distances, the quick recognition of approaching planes, whether friendly or hostile, and as important as any, the landing. During daylight hours, unless enveloped in cloud or fog, of course the eyes play also a very important part in the maintenance of equilibrium: this is realized and admitted by all concerned in the study of the mechanism of equilibrium, and on clear nights the visual impulse is useful in keeping right side up; but on cloudy nights, or when flying in cloud or fog, the aviator may as well be blindfolded for all help he receives from his eyes, and here a normal ear-balancing apparatus is most essential.

The standard of visual acuity was made $\frac{20}{20}$, uncorrected, in each eye, and it was most rigidly adhered to, no waivers being granted for deficiencies in this particular. Where a few seconds' difference in the time of two adversaries starting to maneuver, and where the advantage of position frequently mean the difference between life and death, it was felt that while quick perception and recognition of objects does not entirely lie in keenness of vision, this basic factor must be present in full degree. The near point must be consonant with the age of the candidate, and especial attention was given to this test with the view of eliciting all the information possible concerning the refraction of the eye. At first the refraction of each man was gone over under homatropin cycloplegia on the conclusion of all the other tests; but this was later abandoned, and the refraction was estimated by comparison of the near point, muscle balance and the ophthalmoscope. It was quite obvious that no myopes of over a quarter diopter could make the visual acuity demanded, and it was felt that hyperopia of over 2 diopters was not desirable, owing to the possibility of relaxation of the ciliary muscle under fatigue and the resulting blur of vision.

What limitations of muscular imbalance might be allowed with safety was a question that was most difficult to settle, and at least two alterations were made in the original determination. The maximum hyperphoria to be allowed was placed at 1 degree at the outset, and it was not changed, every one in authority agreeing that a wider deviation in this particular would possibly lead to actual diplopia on fatigue. The horizontal limits were not so easily defined: the final standard was not to allow more than 2 degrees of either exophoria or esophoria without doing prism duction tests, and if the relation between the abduction and adduction was maintained, to pass the man, provided, of course, the deviation was not too high; one over 4 degrees was seldom passed unless the man was especially desirable.

Normal color vision was considered a necessary asset, and was tested with Jenning's color chart; but slight variations in the recognition of extreme shades were considered as negligible, the feeling being that what was required was ability to determine the basic colors, and not all their tones. The visual field was examined only for form, the sensitivity of the retinal periphery for colors not being studied.

A careful examination of the pupil reaction to light, both direct and consensual, and to accommodation was required, and the rotation of the eyeball was studied for both inequality in action and nystagmus. Should the latter be developed within 45 degrees of central fixation, it was absolutely disqualifying. It was felt that some useful knowledge of the condition of the central nervous system might be obtained by these examinations, and great stress was laid on the examiner's being particular in making them. Ocular tension was tested by finger pressure unless there was some special reason for using a tonometer.

Since estimation of distance is one of the great requirements for a skilful pilot, the stereoscopic vision, was examined with great care. A card containing ten small silhouettes was used, and a correct reading of their sequence, by giving the number attached to each, was demanded. Of course, a normal stereoscopic vision will not enable an untrained person to estimate distance in the air with any accuracy, but it will be most helpful to him in attaining this accuracy and will be an essential factor in his making a safe landing.

After all other parts of the ocular examination were concluded, the pupils were dilated and an ophthalmoscopic examination was made.

Such an examination, it will be admitted, when properly made, would exclude all organic conditions that could interfere with the candidate's success as a pilot, and there remained only functional derangements. A most searching inquiry was made as to the candidate's having had attacks of migraine with scotomas or hemianopsia, diplopia or other ocular manifestations of disturbances in cerebral circulation; for not only would such an attack, should it occur in flight, be most disastrous, but such attacks usually indicate a none too stable nervous tone.

It will be admitted, it would seem, that the examination as above outlined tends to be rather searching in its scope and should satisfy even the most exacting critic. To be sure, certain things are not gone into which bring in what may be called the mental elements of vision; but these matters of judgment seem to be concerns rather for the psychologist than for the ophthalmologist.

H. Maxwell Langdon, M.D., Philadelphia.

To the Editor:—I have watched with much interest the process of determining who are and who are not fit for the aviation service: what makes for and what against, a good aviator.

Unquestionably the aviator must be high in equilibration efficiency, and, no doubt, the semicircular canals have much to do with this, as do also the eyes.

It is my belief, however, that there is a certain something aside from both of these that is very important which we do not grasp at present—a certain sense of direction as well as equilibration, of which some individuals are more possessed than others, and which is susceptible to a high state of cultivation—the sense by which he who possesses it may return from a long ramble in strange forests or mountains and sit down and draw a very true map of the course he has taken; or at the end of his ramble can draw an accurate map of the way back, while another individual traveling with him will have no idea whatever of the direction in which return would be.

This sense of direction is highly developed in the pigeon. May it not be that from those wonderful carriers we can eventually discover the secret of that which makes a good aviator? Is there not possibly an association center controlling this matter of equilibration and direction—a *center for aviation*, so to speak?

Would it not be a good added test of the probable efficiency of an aviation candidate if he were put through some mechanical labyrinth or through by-ways of confusing direc-

tions, and then asked to point the way in a direct line to the spot from which he started? I believe that this would bring to light a surprising difference in the ability of different candidates to retain direction memory, or, in other words, to remember *which way is home*, a very important item to the flier in military service.

V. A. CHAPMAN, M.D., Milwaukee.

A NATIONAL PUBLIC HEALTH DAY

To the Editor:—The celebration of Public Health Day in Philadelphia, May 1, 1918, concerning which a news item appeared in THE JOURNAL, May 4, excited considerable local interest in the subject of sanitation and the question of improving the national physique. It has been decided more recently by Dr. Krusen, director of public health and charities, to carry on follow-up work in the different sections of the city.

In view of the great importance of physical fitness of the civilian population, especially during the present critical period, I would suggest that a national public health day be celebrated as soon as practicable. In this connection, it is to be recollected that the percentage of rejections among our recruits (29 per cent.) is, sadly enough, too high, and a country-wide, systematic effort should be made to reduce it as rapidly as possible.

In this way a propaganda, having for its object an improvement of our national physical reserve, may be successfully inaugurated. The value of physical fitness will be accentuated through the observance of a national health day. We must not lose sight of the fact that the American race has been slowly and gradually deteriorating physically during the last century. It has been said that if the war is to be won it is to be won by health and certain constructive factors. It follows that among our home defense agencies, an improved national physique easily holds first place.

Moreover, it is vitally important that the civilian population should aim to increase its average man power for national service. There has already taken place a great diminution in the number of producers, because of the fact that many young men have enlisted in the military service and because production, especially farm production has been and must be further increased, not only to feed our own soldiers, sailors and the civilian population, but also to assist in the feeding of our allies abroad.

The recent appointment of physical reserve committees in every community under the auspices of the National Security League will doubtless accomplish good results, if their work is properly planned, since it will tend to upbuild the body, and to that extent improve the health of the general public. It is a matter of common observation by those who have considered the essential factors that enter into hygienic living that muscular activity has been greatly neglected by the average individual; hence a strong movement for the purpose of encouraging physical exercise in this country is both timely and important.

Additionally, however, a practical interest through an enlightened public sentiment, in municipal health rules and regulations, in germ diseases and how to escape them, in personal hygiene and the great economic value of physical fitness, is greatly to be desired.

I feel convinced that a national public health day, properly planned, would stimulate increased interests in, and attention to, the important work of improving the national physique, a matter of vital importance during the present crisis.

The celebration of such a day would mark the beginning of so-called follow-up work throughout the country during the ensuing year. This should consist, among other things, of an extension of the time devoted to personal hygiene, sanitation and preventive medicine in the upper grades of the public schools; also courses in these subjects in our colleges and universities, and a campaign of education in the interests of public health, in which our medical and civic bodies should actively and jointly engage. This follow-up work could be best conducted under the auspices of the American Medical Association, which touches the local profession everywhere. Indeed, the announcement by this leading organization of a national public health day at its forthcoming session would be likely to bear much fruit, particularly if President Wilson could be induced, which is quite probable, to issue a proclamation endorsing the movement.

Surely, the question of physical fitness at this time imposes an obligation on the organized medical profession.

JAMES M. ANDERS, M.D., Philadelphia.

SERUM DIAGNOSIS OF SYPHILIS

To the Editor:—Referring to the article of Dr. Noguchi (THE JOURNAL, April 20, 1918, p. 1157) and his supplementary note (April 27, p. 1252) on the use of sodium acetate in preserving guinea-pig complement for the serum diagnosis of syphilis, I should like to add that while sodium acetate does work very well with many guinea-pig serums, it is not entirely satisfactory with some specimens, owing to a certain amount of precipitation that occurs occasionally. The sharp reactions and rapid hemolysis that tend to take place with complement preserved with the acetate has in my experience during the last six months indicated that in the weaker positive reactions they were more likely to become negative, thereby giving one a misleading result. This so far is the only criticism that I could make regarding the use of sodium acetate for the purpose. I might say that with the ice-box method of preliminary incubation as done by the New York Board of Health, the use of complement preserved by the acetate has proved highly satisfactory, while a check with the same specimens, using the same reagents, has given an end-result that shows either a complete or partial hemolysis except in the strong positive cases.

Referring to the use of the native complement in human serums in making the Wassermann test, I desire to say that there are a certain number of serums that contain sufficient native complement for the test, yet at the same time these serums are more or less anticomplementary in the active state, which property is somewhat increased during the first hour's incubation, tending to produce a false positive result in otherwise negative serums. This particular variety of serum is found sometimes in patients that are jaundiced, and even inactivation does not always destroy the anticomplementary substance. Bile in the blood is likely to cause misleading results, and has already been mentioned in the work of several serologists.

I should like to know if the best procedure in testing those serums that are slightly anticomplementary would not be a careful titration in the active state in addition to inactivation and further tests with increasing amounts of guinea-pig complement. It should be emphasized that many serums are even too anticomplementary after inactivation for dependable results, and the only thing to do is to draw another sample of blood and repeat the test. Where bile is a disturbing element, a calomel purge may produce the desired result. Other conditions may be cleared up by change of diet, etc., as the well known milky serums usually found after a hearty meal. I often encounter the so-called "milky" serums under other conditions, and they are all practically more or less anticomplementary after inactivation.

There is no doubt that the ideal Wassermann test would be a careful titration, using the native complement present, provided the antigens are acetone-insoluble preparations and a careful check is made on each serum for anticomplementary properties. The much heralded Hecht-Weinberg and its various modifications depends for its reputation on the native complement, natural antisheep amboceptor, etc. With this new method as outlined by Dr. Noguchi one can easily get the index by using enough tubes, varying the amounts, etc.

There are many laboratory workers who condemn every new method that appears before a thorough trial, thereby causing the general practitioner to adhere to this or that particular test or modification, because the advertisement says it is the best, without fully understanding the principles involved.

It is, I think, generally conceded by most serologists that both the cholesterinized and the alcoholic (preferably the acetone-soluble) antigens should be used with each specimen

tested. This is not being followed by some, and only emphasizes one more reason why we should have a standard technic, at least a standard antigen or a prescribed method for making one; there is as much indication for a standard antigen as there is for a standard unit for diphtheria and tetanus antitoxin, and I hope to see the U. S. Public Health Service adopt a standard antigen if not a standard method.

S. S. HINDMAN, M.D., Toledo, Ohio.

To the Editor:—Dr. Hideyo Noguchi, in his article on serum diagnosis of syphilis under war conditions (THE JOURNAL, April 20, 1918, p. 1157), mentions that in strongly positive serums complement is fixed wholly in twenty minutes at 21 C., but that on account of weaker reactions the time for fixation should be prolonged to two hours. In recent experiments I have found that complement is completely fixed practically at once at room temperature. The results of a number of special tests indicate that in routine tests it probably is quite sufficient to allow the serum-complement-antigen mixture to stand for ten minutes before adding corpuscles and amboceptor. This seems to be time enough even with weakly positive serums and spinal fluids. As I am unable to make comparative tests on a large scale, I hope that the possibility of shortening the time of the Wassermann reaction in the way indicated may be studied further by others more favorably situated for the purpose.

J. M. RETINGER, Chicago.

THE PHARMACIST IN THE ARMY MEDICAL DEPARTMENT

To the Editor:—There seems to be a well defined attitude toward pharmacists in the Army—that of almost completely ignoring their professional distinction, along with an amazing indifference as to their proper place and utilization. Needless to say, such a policy results not only lamentably as regards the pharmacist's status in the Army, but his professional value is lost to the Medical Department.

It is also quite apparent that since modern war machines are essentially and thoroughly businesslike in structure and character, modern methods must be employed to achieve success. It is therefore logical and imperative that every branch and wing of that complex machine be conducted on the modern principle of specialization. The trained man, the specialist, was never more desirable, never more absolutely indispensable. Such a principle is the very backbone of all modern institutions, and invariably spells success. Division of labor and centralized effort are built, supported and owe their existence to the specialist—the trained man.

The pharmacist is a specialist, trained in a part of medical science that cannot be ignored without affecting the efficiency of the Medical Department as a whole. A pharmacist's business ability to buy and distribute should be taken advantage of in medical supply depots. His experience would help to correct mistakes in buying and avoid improper packing for distribution of such supplies. This part cannot be emphasized too strongly, since it would effect an enormous economy hardly ever appreciated by nonprofessionals. Likewise a pharmacist would be invaluable at large base hospitals, and his recognition becomes imperative when the dangers of the improper compounding of prescriptions by nontrained men are fully realized.

Aside from sentimental considerations for the pharmacist as an underpaid, neglected professional, his recognition is dictated by common sense and cannot fail to justify itself from a business and economical standpoint. Never would such a step be more timely, never was it more obvious and desirable. Indicting criticism of the present system of the neglected pharmaceutical branch of the Medical Department could be easily brought to light. The method of packing for distribution could be pointed at as wasteful, which a professional eye could readily detect and condemn. Immense savings could be gained even in the small Army dispensaries were the business end of medical supplies placed in the hands of the logical man—the pharmacist. As for prescriptions, their importance and the skill required for their preparation cannot be overlooked. The idea that a bright private could be taught to perform the few simple operations is not only fallacious but also fraught with dangers.

Perhaps the following incident will serve to illustrate the folly of just such a belief: At an examination for promotion to the grade of sergeant, the aspirant was asked what a "C. C. pill" is. "Any pill containing one cubic centimeter," was his immediate reply. Another applicant was asked how to administer a Seidlitz powder. "Place the powder on the patient's tongue and wash it down with water," was his answer.

Pharmacy is a science—as exacting and important as the science of surgery—and a pharmacist's place should be second only to that of the surgeon. Are civilians more entitled to protection against mistakes of unskilled hands than soldiers?

ALBERT WHITE, Post Dispensary, Corozal, C. Z.

MODIFIED LAVATORY CHAMBER

To the Editor:—In THE JOURNAL, May 18, Dr. Zan D. Klopper of Chicago has an article entitled "The Practicability of the Modification of the Lavatory Chamber." This is not a new idea, as the late Dr. B. Howard Rand, professor of chemistry in Jefferson Medical College, in 1876, drew a diagram similar to Figure 2 in Dr. Klopper's article, on the blackboard before his class. His idea was superior to Dr. Klopper's, as he not only embraced all of the doctor's but he had a cover to the seat with a spring attachment to compel the individual to keep his body bent forward. The idea was not only to aid defecation but to prevent the occurrence of a hernia.

J. B. POTSDAMER, M.D., Philadelphia.

[NOTE.—Dr. Klopper claimed no originality for the theory. The physiologic basis for the position which he described has been understood for many years. He did, however, work the matter out in some detail and presented drawings to enable those interested to design a proper apparatus.—ED.]

ARSPHENAMIN (SALVARSAN) REACTIONS

To the Editor:—Many have gained the impression that arsphenamin is a severely toxic spirocheticide. I believe that none of the American preparations are as toxic as was the German-made salvarsan. Many physicians have used the American products in our laboratories, and have found the reactions fewer and lighter than were formerly noticed with the German-made salvarsan. These deductions are made from several thousand treatments with the German salvarsan and the American-made salvarsan and arsenobenzol. An unfortunate feature is that many physicians have substituted other forms of antisyphilitic treatment, with the result that the patients do not have such an efficient destruction of spirochetes as they did with the use of salvarsan. When a death or severe reaction follows the use of one of these drugs, it is reported both in the public and in the medical press, but very little is said of the thousands of favorable results.

Occasionally a reaction may occur from other causes than faulty technic. All patients who are to receive an intravenous arsphenamin treatment should have a laxative the night before, should not have any breakfast, and should not eat a full meal the same day that the arsphenamin is administered. Some patients that have taken several intravenous arsphenamin injections without any reactions have had reactions of variable degree following treatment soon after a full meal. Reactions have occurred in a large percentage of patients who have eaten a large meal within six or eight hours after treatment. These reactions come on slowly with headache, nausea, vomiting, diarrhea and a temperature of 102. The symptoms may last two days.

In preparing the solutions we recommend the use of triple distilled water, redistilled through glass, mixing the salvarsan brand of arsphenamin in about 50 c.c. of cold water, never over 100 F., and preferably under that. The solution is neutralized with sodium hydroxid and then filtered through a sterile cotton filter into 100 c.c. of cold redistilled water.

With the arsenobenzol brand of arsphenamin it is necessary to dissolve in hot water; otherwise the technic is the same. Hot water should never be used in preparing the salvarsan brand. With both preparations the intravenous injection should be made within a few minutes after the material is prepared.

H. S. WARREN, M.D., Chicago.

THREE DROP METHOD OF DETERMINING HEMOGLOBIN BY THE TALLQVIST SCALE

To the Editor: In working with the Tallqvist hemoglobin scale, I find that by taking three drops of blood about 2 cm. apart, each drop coming under an opening in the scale, one can determine the results of the hemoglobin test much better than by the one drop system, as it affords three scales to read from at once.

R. J. WEIDMANN,
Takoma Park, D. C.
Corporal, Medical Department, U. S. Army.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BREATH HOLDING IN CHILDHOOD

To the Editor:—Please give cause and treatment for child holding its breath to the point of cyanosis and convulsions, seen most often when crying from anger. W. T. POTTER, M.D., Aurora, N. C.

ANSWER.—This condition of breath holding, also called inspiratory apnea, is not infrequently observed in early childhood. At first one would be led to think that the condition is a manifestation of spasmophilia or tetany with the associated laryngeal spasm and generalized convulsive seizures. On further investigation, however, this is not confirmed. Breathing is arrested or remains stationary in the midst of the crying attack, but no inspiratory spasm occurs. The child attempts to cry, but the inspiratory muscles remain in a tonic state. He throws himself about, becomes extremely pale and finally cyanotic, the body becomes rigid, the eyes turn or become set, and he loses consciousness momentarily. The attack usually lasts only a few seconds, though it may continue several minutes. In the more severe cases, general convulsions may occur. When the spasm relaxes the child cries, though he resumes normal breathing, and soon acts as though nothing had happened, or falls asleep.

This condition also suggests a possibility of epilepsy, or other organic changes in the central nervous system. It is true that the differentiation of attacks of inspiratory apnea or breath holding from true epilepsy may present great difficulties. Nevertheless, it should be pointed out that the breath-holding attacks follow immediately after severe crying or excitement, while epileptic attacks occur suddenly while the child is at quiet play or even during sleep. Biting the tongue is characteristic of epileptic attacks. Involuntary evacuation of the bladder or bowels may occur in either attack. Prolonged sleep usually follows an epileptic seizure and is characteristic, though in some cases of breath holding, the prostration may be so great that a prolonged sleep, lasting several hours, ensues after the attack.

These attacks of breath holding occur most commonly in the second and third years of life, and disappear about the fifth year, whereas the genuine spasmophilia occurs during the first year or two of life. These occur in neuropathic children and are brought on by fear, anger, fright or some other psychic trauma. The children are irritable and ill tempered. Parents fear the recurrence of the attacks and consequently humor them in every possible way. They permit no one to cross the child, no whim remains ungratified, and the little patient is not helped to offer resistance to the recurring attacks. Patients practically always recover after some time, although the attacks may be severe and protracted. It has been pointed out that children with this disorder who fall ill with an acute infectious disease, or who may happen to need some surgical treatment, may become so severely frightened that a protracted breath-holding attack with general convulsions may be so severe as to terminate fatally.

The treatment should be directed toward the general management of a nervous child. He should be warned not to repeat the attacks. Every form of mental overstimulation should be avoided. Frequently patients improve most rapidly if they are removed from the excitement and tension of home surroundings. A short stay at the hospital away from parents and friends is often advisable. Bromids are advised in addition to psychotherapy. During the attack the child may be sprinkled with cold water or he may be immersed in a cold bath.

NUMBER OF MEDICAL RESERVE OFFICERS NEEDED—SALARIES, EXPENSES AND ALLOWANCES

To the Editor:—Please answer these questions regarding the Medical Reserve Corps of the Army and Navy:

1. How many medical men will be needed after the present enlistment of 5,000?
2. Are there openings in the Navy? How many are needed there, and what salary is paid?
3. What is the cost of a complete officer's equipment in each service?
4. What provision does the government make for dependents of officers in the way of money provision outside of the regular salary?
5. What are the salaries of officers in the Army?
6. I have been told that an officer does not receive pay until in active service, which means to me that after receiving a commission the candidate is sent to one of several places for instruction, paying his own railroad fare and paying his own expenses, his salary starting when he begins duty at one of the several cantonments. Is this correct?

FREDERICK A. BAKER, M.D., Rudyard, Mich.

ANSWER.—1. The call of the Surgeon-General is for 5,000 additional reserve officers before Jan. 1, 1919, and at least 2,500 additional each year as long as the war continues.

2. The Navy will probably require 1,000 additional reserve officers during the next year. The salaries paid are: rank of lieutenant, junior grade, $2,000 per year and $432 allowance for quarters when not furnished by the government; rank of lieutenant, senior grade, $2,400 and allowance for quarters, $576; rank of lieutenant-commander, $3,000 and allowance for quarters, $720. There are also liberal allowances for heat and light, the amount varying according to rank, etc.

3. For the cost of the equipment of a medical officer in the Army, see THE JOURNAL, May 18, 1918, p. 1469. When naval officers first report for active service for training they are accredited with a clothing allowance of $50, except in the Volunteer Naval Reserve not on active duty. When on active duty, members of the Volunteer Naval Reserve receive the service pay of their grade and service.

4. The only money provision made by the government for officers with dependents, outside the regular salary, is the allowance for quarters which is as follows: first lieutenant, $36 per month; captain, $48 per month; and major, $60 per month.

5. The salaries of medical officers in the Army are: first lieutenant, $2,000 a year and allowance for quarters, fuel and light; captain, $2,400 a year and allowance for quarters, fuel and light; major, $3,000 a year and allowance for quarters, fuel and light. The allowance for quarters is granted only to those with dependents; the allowance for fuel and light varies according to tables published by the Comptroller's Department.

6. Medical reserve officers of the Army when ordered to active duty to receive instruction, either in training camps or in other courses of instruction, receive pay from the time they first report for duty or for instruction. They also receive traveling expenses to their various stations.

THE DUNFERMLINE SCALE

To the Editor:—Please tell me what the Dunfermline scale is or where I can find information about it. It is mentioned as used by the Bureau of Child Hygiene of the New York City Health Department in a survey of schoolchildren of Manhattan (THE JOURNAL, April 27, 1918, p. 1257).

E. C. G.

ANSWER.—The Dunfermline scale is a scheme for classifying children according to their degree of nutrition. It was devised at the College of Hygiene and Physical Training and School Clinics in Dunfermline, Scotland, founded by the Carnegie United Kingdom Trust. Children are placed in four nutrition grades: (1) superior condition; (2) passable condition; (3) requiring supervision, and (4) requiring medical treatment. In the 2,535 children examined in New York, the first two grades included each approximately one third of the total number, and the remaining third was divided between the other two.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 9. Chairman, Dr. S. W. Welch, State Capital, Montgomery.

CALIFORNIA: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

COLORADO: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 9-10. Sec. Regular Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 728 State St., Bridgeport; Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, June 18-20. Sec., Dr. H. W. Briggs, Wilmington, Del.

DISTRICT OF COLUMBIA: Washington, July 9-11. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

FLORIDA: (E): Jacksonville, June 10-11. Sec., Dr. G. A. Munch, Tampa.

GEORGIA: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

INDIANA: Indianapolis, July 9-11. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

IOWA: Iowa City, June 6-8. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 18-19. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MAINE: Augusta, July 2-3. Sec., Dr. Frank N. Searle, 776 Congress St., Portland.

MARYLAND: Baltimore, June 18-22. Sec., Dr. J. McP. Scott, Hagerstown.

MICHIGAN: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 4-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

NEBRASKA: Lincoln, June 3-5. Sec., Dr. J. J. Hompes, 612 Sec. Mut. Bldg., Lincoln.

NEW HAMPSHIRE: Concord, June 24-25. Sec., Dr. W. T. Crosby, Manchester.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. Alex. MacAlister, Trenton.

NORTH CAROLINA: Raleigh, June 24-28. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

OKLAHOMA: Oklahoma City, July 9-10. Sec., Dr. J. J. Williams, Weatherford, Okla.

OREGON: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 9-13. Sec., Dr. N. C. Schaeffer, State Capital, Harrisburg.

RHODE ISLAND: Providence, July 11. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 9. Sec., Dr. P. B. Jenkins, Waubay.

TENNESSEE: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

TEXAS: Austin, June 18-20. Sec., Dr. M. F. Bettencourt, Mart.

UTAH: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, June 10-12. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 18-21. Sec., Dr. J. W. Preston, Roanoke.

WASHINGTON: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.

WEST VIRGINIA: Wheeling, July 9. Health Com., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 25-27. Sec., Dr. J. M. Dodd, Ashland.

Addenda to State Board Statistics

Table D on pages 1084 and 1085 of THE JOURNAL of April 13, 1918, was based on signed reports from the various state licensing boards. New York and New Jersey have since reported that the University of Virginia Department of Medicine, the University of Illinois College of Medicine, and the Hahnemann Medical College of Chicago have been admitted to their registered lists. The secretary of the Kansas State Board of Medical Examiners also had reported that only Class A medical colleges were granted recognition. In a later communication he states that Class B colleges will be recognized until 1922. The medical schools now rated in Class B for which recognition in Kansas has been extended until 1922 are: University of Arkansas Medical Department, Little Rock; College of Physicians and Surgeons, Los Angeles; College of Medical Evangelists, Loma Linda; Loyola University School of Medicine, Chicago; Hahnemann Medical College and Hospital, Chicago; New York Homeopathic Medical College and Flower Hospital, New York; Leonard Medical School, Raleigh; Eclectic Medical College, Cincinnati; Ohio State University College of Homeopathic Medicine, Columbus; Temple University Medical Department, Philadelphia; Meharry Medical College, Nashville, and Fort Worth School of Medicine, Fort Worth, Texas.

Connecticut March Examination

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the practical and written examination held at New Haven, March 12-13, 1918. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 17 candidates examined, 10 passed and 7 failed. Two candidates were granted reregistration licenses. The following colleges were represnted:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1917)	83.1
University of Maryland	(1907)	76.6
Tufts College Medical School (1915) 75.6;	(1917)	83
Columbia University	(1918)	82.8
Fordham University	(1918)	81.8
University and Bellevue Hospital Medical College	(1918)	88.8
University of Pennsylvania	(1917)	77.8
University of Vermont	(1917, 2)	76.5
FAILED		
University of Maryland (1916) 74.1;	(1917)	72
College of Physicians and Surgeons, Boston	(1908)	54.5
University of North Carolina	(1910)	59.3
University of Vermont	(1914)	60.9
Medical College of Virginia	(1917)	63.3
National University, Athens	(1911)	58.3

District of Columbia April Examination

Dr. Edgar P. Copeland, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, April 9-11, 1918. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Ten candidates were examined, all of whom passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1917)	89 2
Howard University (1910) 82.6; (1917) 90.6; (1918) 77.8, 80,		81
Baltimore Medical College	(1905)	80.1
Harvard University (1904) 80.4;	(1908)	84.7
University of Vermont	(1912)	75.4

Book Notices

RADIOGRAPHY AND RADIO-THERAPEUTICS. By Robert Knox, M.D., M.R.C.S., L.R.C.P., Consulting Radiologist, Great Northern Central Hospital, London. Part I, Radiography. Cloth. Price, $9. Pp. 403, with 113 illustrations. New York: The Macmillan Company, 1917.

This is one of the best books covering the subject of general roentgen diagnosis issued within recent years. It is especially adapted for use by the general practitioner or the student of roentgenology, although it contains much of interest and information of value to the specialist in this line. It has been thoroughly revised to cover the field to the date of issue, describing modern equipment and the technic employed. The chapter on the localization of foreign bodies by methods used in the present war is of special interest at this time. Numerous plates of gas gangrene cases are shown. The work is well and profusely illustrated, and covers the subject with a thoroughness that leaves little to be desired in a volume with so broad a scope.

Meat and Luxury.—So far as is known, taking meat even in large excess is not harmful, but it represents luxury and waste.—Lusk, Food in War Time.

Medicolegal

Color Blindness as a Loss of Sight

(Routt v. Brotherhood of Railroad Trainmen (Neb.), 165 N. W. R. 141)

The Supreme Court of Nebraska affirms a judgment for the plaintiff for $1,740, the full face of a benefit certificate held by him in the defendant association, and interest, on account of his having become afflicted with color blindness and for that reason having been discharged from the service of a railroad company that had employed him as a railroad trainman. A rule of the association provided that any beneficiary member in good standing who should suffer the complete and permanent loss of sight of both eyes should be considered totally and permanently disabled and should thereby be entitled to receive the full amount of his beneficiary certificate. The plaintiff contended that as a railroad trainman he had become totally blind, and that within the terms of the policy held by him in the defendant association he had suffered the complete and permanent loss of the sight of both eyes, which the defendant denied.

The condition, the supreme court says, was not made that the eyes of the insured should be taken out of their sockets and away from his physical body, but only that he should "suffer the complete and permanent loss of sight of both eyes." It did not say that he should become blind in both eyes so as to become unable to see objects of any kind, but that he should lose "the sight of both eyes." This he did when he became color blind. He lost his sight in both eyes. It affected both eyes alike. Besides, the color blindness was "complete and permanent." He could not see, and that applied to both eyes, and he was discharged because the defect in his vision made him unfit for railroad service. The thing for which he sought indemnity, loss of his vision, came to him. If his insurance did not indemnify him, it served no good purpose. Besides it was ambiguous and misleading, and should be construed as the defendant knew the plaintiff would understand it.

Where the peculiar malady known as color blindness so impairs the sight that the member of a fraternal insurance association of railroad trainmen who is insured therein is unable longer to continue in the train service, and is discharged therefrom on account of such defect in his vision, it will be held that he is entitled to the benefits provided by the certificate, the constitution, and by-laws and rules of the society. In such case, while the sight of the insured may not be entirely destroyed for some purposes, it will be deemed destroyed and lost as to the particular vocation of a railroad trainman, and he will be held entitled to recover on the benefit certificate which he holds. Three members of the court dissent.

Employment of Jail Physician and Remedy of Latter

(Sawyer v. Commissioners of Androscoggin County (Me.), 102 Atl. R. 226)

The Supreme Judicial Court of Maine directs a peremptory writ of mandamus to be issued to compel the county commissioners to fix the pay of the petitioner for services as jail physician. The court considers at some length the question of who, if either, the county commissioners or the sheriff, has the legal right to employ a physician to render medical attendance to sick prisoners confined in jail. The court says that there is no statute in Maine conferring express authority either on the sheriff or on the county commissioners to employ a "physician authorized to attend the sick," as expressed in Chapter 85, Section 47, of the Revised Statutes of 1916, or "the physician appointed to attend said prisoner," as said in Chapter 127, Section 26. Yet these expressions and the necessity of such action necessarily imply the duty and power of some authority, having the control and custody of prisoners, who are helpless in their own right, to employ a physican to administer to the welfare of the prisoners in the county jail at the expense of the county. This authority once implied from the statutes is as positive as if expressed in the statutes.

The situation presents a county containing a jail erected and supported for the confinement and detention of the prisoners that may be committed to it. These prisoners are in the custody of the law and helpless. They can neither confer nor communicate with the outside public except through the medium of some official agency. Their health, as an infliction on themselves, or as a menace to the other prisoners, as in the case of an infectious or loathsome disease, depends on official attention. These are not theoretical, but actual, conditions. These circumstances demonstrate the necessity of lodging authority in some agency that can act quickly and efficiently in the employment of medical aid. In view of the official functions of the sheriff, as jailer, and the county commissioners, officers of the county, which agency is the better adapted to meet the requirements of this situation? The conclusion reached by the court is that an interpretation of the statute, by express language, not only gives, but imposes on, the sheriff or his deputy, as jailer, the sole responsibility for the care, custody and safeguarding of the prisoners, and by necessary implication authorizes him alone, when necessary, to employ a physician to administer to the prisoners.

It having been determined that the sheriff had the implied power to employ a physician to treat the prisoners, was the physician entitled to the remedy of mandamus? This question could be settled by the process of elimination. Section 27 of Chapter 85 of the Revised Statutes provides that for all subordinate assistants and employees of the jailer the county commissioners shall fix their pay. They therefore cannot bring suit against the county until the pay is fixed: 1. The commissioners, while they had refused to pay the bill presented by the physician in this case, had not fixed his pay. Hence he could not bring an action of assumpsit on an implied contract or quantum meruit (for the reasonable value of his services). 2. He was not a public officer. He was an employee. His employment was conceded. The legality of his employment only was in question. Hence quo warranto did not lie. 3. The county commissioners had not acted, according to the statute, on his bill. They had rejected it, not "fixed his pay" as something or nothing. Hence certiorari would not lie. It quite clearly appeared that no remedy would lie except on a petition for mandamus. The petitioner must show that he was legally employed and had a claim against the county on which it was the duty of the county commissioners to fix the amount to be paid. The legality of his bill depended on the legality of his employment.

Not Liable for Injury to Patient Escaping from Pesthouse

(O'Brien v. Stromme et al. (Mont.), 169 Pac. R. 36)

The Supreme Court of Montana says that the complaint alleged that the plaintiff, being afflicted with smallpox, was taken to the pesthouse maintained at or near Butte for the accommodation of such cases by the Silver Bow County Board of Health; that while in delirium from the disease and because of the board's failure to provide sufficient guards, he escaped on a cold winter's night and so froze his feet that amputation of several toes became necessary, for which he claimed damages. He was nonsuited at the trial, and sought by appeal to present the question of whether the members of the board were liable. The judgment of nonsuit is affirmed.

Conceding that if, in arranging to care for matters of this kind, the board acts judicially or quasi (as it were) judicially, no liability for mere mistakes would exist, the plaintiff insisted that the defendants were liable on the theory that the duties of the board in the premises were ministerial, and for negligent nonfeasance or misfeasance the members must answer to whosoever is injured thereby. Whether this was correct the court might not decide here because the record did not show negligence or any injury due to negligence. It was true that practically all the evidence offered by the plaintiff for that purpose was excluded on objection—why, this court does not entirely understand; but since no question was made of the correctness of these rulings, this court could not import into the record what the plaintiff did not prove. No more than any one else can public officers be held to respond for injuries until it is shown that their fault is the proximate cause of such injuries.

Society Proceedings

COMING MEETINGS

American Medical Association, Chicago, June 10-14.
American Association of Anesthetists, Chicago, June 10-11.
Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Laryngological Association, Atlantic City, May 27-29.
Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
American Medico-Psychological Association, Chicago, June 4-7.
American Ophthalmological Society, New London, Conn., July 9-10.
American Otological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago., June 10-11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
Maine Medical Association, Portland, June 4-6.
Massachusetts Medical Society, Boston, June 18-19.
Montana Medical Association, Butte, July 10-11.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
New Jersey Medical Society, Spring Lake, June 25-26.
North Dakota State Medical Association, Fargo, June 19-20.
Oregon State Medical Association, Portland, June 27-29.
Rhode Island Medical Society, Providence, June 6.
Southern Minnesota Medical Association, Winona, Minn., June 24-25.
Washington State Medical Association, July 10.
Western Roentgen Society, Colorado Springs, June 27-28.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

May, 1918, 15, No. 5

1 *Cutaneous and Intracutaneous Tuberculin Tests in Infants and Children. M. H. Baas, New York.—p. 313.
2 *Hypertonic Infant; Curative Action of Atropin on Certain of Its Manifestations. S. V. Haas, New York.—p. 323.
3 Effect of Hunger on Nervous Irritability. J. R. Gerstley and R. G. Hoskins, Chicago.—p. 336.
4 *Treatment of Enuresis without Drugs; Report of Thirty-Four Consecutive Recoveries. W. R. P. Emerson, Boston.—p. 339.
5 Xanthochromia of Spinal Fluid with Complete Coagulation in Tuberculous Meningitis. D. B. Leitch, New York.—p. 348.
6 Pylorospasm and Congenital Pyloric Stenosis. J. Foote, Washington, D. C.—p. 351.
7 Congenital Intestinal Obstruction; Report of Case. A. V. St. George, New York.—p. 354.

1. Value of Tuberculin Tests.—Each child was given a von Pirquet test which was observed after twenty-four, and again after forty-eight hours. If positive, this was regarded as evidence of tuberculous infection. If negative after forty-eight hours, a second von Pirquet test was performed. After forty-eight hours a third test was made. If this proved negative, an intradermic injection of 0.1 c.c. of 1:1,000 old Koch tuberculin (that is, 0.1 mg.) in saline solution was given. If after forty-eight hours this was negative, 0.1 c.c. of a 1:100 solution (that is, 1 mg.) was injected and repeated after forty-eight hours if negative. If after these six tests the case still failed to react, it was considered definitely negative. In all, 1,165 tests were made on 206 children. In all, fifty-two children showed a positive reaction to some of the tests, a percentage of 25.2. If but a single von Pirquet test had been employed the incorrect conclusion would have been drawn that only 3.3 per cent. of the inmates had been infected with the tubercle bacillus. If two von Pirquet tests had been used the percentage would have been doubled (6.8), and so on, until by the use of the intradermic tests the true percentage of infected cases was found to be 25.2.

2. **Atropin for Hypertonic Infant.**—The hypertonic infant shows a tendency to rigidity, overaction of involuntary muscles and soon after birth develops signs of physical and psychic irritation, presenting the syndrome (physical) of vomiting, often visible peristalsis, constipation and imperfect nutrition; (psychic) or general irritability, insomnia and crying. In Haas' opinion the etiologic factor of this state would appear to be a hyperexcitability of the autonomic nervous system. Although apparently a feeding problem, changes in method and character of feeding does not correct the condition. Atropin in doses of 1 drop or more of a 1:1,000 solution with each feeding usually relieves the condition at once and apparently increases the infant's tolerance for milk. Atropin in these cases may be used in large doses without danger. Haas suggests that investigation along these lines may reveal the etiology of hypertrophic pyloric stenosis.

4. Drugless Treatment of Enuresis.—The children included in Emerson's series of thirty-four cases all recovered without the use of any drugs whatsoever. The treatment is directed toward teaching the child the "dry habit" and, on the other hand, of interrupting and eliminating the "wet habit." This treatment consists of four methods, all or one of which may be used in a given case to establish the "dry habit." The "dry habit" once inaugurated must then be continued by careful oversight. 1. Mental suggestion. 2. Establishing the "dry habit" by teaching the reflex to act at regular intervals, and always before the time the "wet habit" occurs. 3. Local irritation by irritating the vesicular sphincter and the posterior urethra by means of a bougie-a-boule, so that sensory impulses passing to the brain will become intensified sufficiently to attract the patient's attention, until the habit of control is attained. 4. Cerebrospinal irritation is produced by the injection into the spinal canal of physiologic sodium chlorid solution, producing such stimulation as to arouse the whole mechanism into consciousness when habit holds it under control. These methods singly or combined, have been sufficient to relieve the thirty-four children in this series.

American Journal of Physiology, Baltimore

April, 1918, 46, No. 1

8 *Regulation of Renal Activity. Regulation of Urea Excretion by Concentration of Urea in Blood and in Urine. T. Addis, G. D. Barnett and A. E. Shevky, San Francisco.—p. 1.
9 Id. Regulation of Urea Excretion by Anatomic Factors. T. Addis, A. E. Shevky and G. Bevier, San Francisco.—p. 11.
10 *Id. Regulation of Urea Excretion by Unknown Factors. T. Addis, G. D. Barnett and A. E. Shevky, San Francisco.—p. 22.
11 Salivary Factor in Relation to Dental Caries. P. R. Howe and M. R. Keniston, Boston.—p. 28.
12 *Influence of Music on Electrocardiograms and Blood Pressure. I. H. Hyde and W. Scalapino, Lawrence, Kan.—p. 35.

8. Regulation of Urea Excretion by Concentration of Urea in Blood and in Urine.—According to the authors neither the concentration of urea in the urine nor the volume of urine are factors which appreciably influence the rate of excretion of urea.

10. Regulation of Urea Excretion by Unknown Factors.—There was a progressive increase in the rate of urea excretion in consecutive observations on rabbits subjected to catheterization and bleeding, so that at the last the rate is nearly twice as great as at the commencement of the experiment and exceeds the rate yielded by the rabbit under the same conditions except for the absence of handling. This increase in the activity of the kidney occurs in spite of the absence of any change in blood urea concentration.

12. Influence of Music on Cardiovascular System.—The object of the experiment made by Hyde and Scalapino was to ascertain the effect of different kinds of music on the heart and blood pressure in individuals who are known to have musical talent and are fond of music; also in persons who are indifferent and have no fondness for music, in neurasthenics and in some animals. The cardiograms were recorded with the Einthoven string galvanometer. The pulse and pressure were obtained with a Tycos and a modified form of Erlanger's sphygmomanometer, and the music from phonographic records. The pieces of music were first, Tschaikowsky's Symphonie pathétique, characterized by its tragic, slow, minor movements; second, the toreador's brilliant description of the bull fight from Carmen; and third, the National Emblem, a stirring rhythmic march by Sousa. While listening to the symphony, the average effect is a slight decrease if any of the "P. P." wave, and therefore a relatively slight increase in the pulse rate, and also that the amplitude or

E. M. F. of the "R." wave is increased. From two to ten minutes after the music has ceased, the pulse rate and the E. M. F. have increased considerably, but the systolic and pulse pressure have fallen. Consequently the minor tones of the symphony records caused an increase in cardiac activity and action current, but a fall in blood pressure.

Toreador's stirring song produced a different picture of cardiograms. The pulse rate was accelerated and the E. M. F. or amplitude of "R" wave became less as soon as the song was heard. This is graphically shown in the decrease of the "P. P." and "T. P." phases, and height of the "R" wave in cardiograms obtained while listening to the song. The after effect was increased systolic and pulse pressure and pulse rate, but decreased action current. It seems, therefore, that this kind of music had a stimulating effect on the circulation by increasing the blood pressure and pulse rate while lessening the action of current of the ventricular contraction. The effect of the inspiring rhythmical tones of the National Emblem, was a slower pulse rate, a longer pause or "T. P." wave, and an increase of not only the systolic and pulse pressure but also the action current of the ventricular contraction. It seems that this music had its stimulating effect on the vagus, and that this as well as other kinds of music may have an influence on the system in other respects. The authors suggest that it is possible that a careful selection of music may be a beneficial aid in the treatment of nervous disturbances.

Boston Medical and Surgical Journal

May 2, 1918, **178**, No. 18

13 Tuberculosis. J. B. Hawes, 2nd, Boston.—p. 589.
14 Medical Competence and Hospital Efficiency. F. D. Donoghue, Boston.—p. 594.
15 Radium in Treatment of Carcinoma of Buccal Cavity. R. B. Greenough, Boston.—p. 598.
16 Study of Diphtheria Carriers. D. M. Lewis, New Haven, Conn. —p. 602.
17 Plea for Legitimate Trial of Scientific Medical Methods in Chronic Intestinal Conditions Before Resorting to Surgical Interference. M. D. Ordway, Boston.—p. 606.
18 Primary Syphilis of Eyelid; Report of Case. H. D. Lloyd, Boston. —p. 609.

Cleveland Medical Journal

April, 1918, **17**, No. 4

19 Colon Bacillus Infections. J. Phillippa, Cleveland.—p. 215.
20 Determination of Type and Serum Treatment in Pneumococcus Infections. J. E. McClelland, Cleveland.—p. 226.
21 Campaign against Venereal Diseases in State of Ohio. H. N. Cole, Cleveland.—p. 231.
22 Marriage Customs and Human Evolution. C. L. Redfield, Chicago. —p. 236.
23 Simultaneous Avulsion Fracture of Tubercle and Upper Anterior Surface of Both Tibiæ. J. J. Kurlander, Cleveland.—p. 241.
24 Conservation of Vision Classes. S. H. Monson, Cleveland.—p. 245.

Florida Medical Association Journal, Jacksonville

March, 1918, **4**, No. 9

25 Medical Preparedness in Great Drive of Democracy. J. C. Bloodgood, Baltimore.—p. 255.
26 What War Has Done for Medicine. S. W. Lambert, New York. —p. 261.
27 What is Nightmare or Pavor Nocturnus? C. C. Ruter, Madison. —p. 263.
28 Angina Pectoris. J. P. Esch, Daytonia Beach.—p. 264.

Journal of Biological Chemistry, Baltimore

April, 1918, **34**, No. 1

29 Hydrogen Ion Concentration of Contents of Small Intestine. J. F. McClendon, A. Shedlov and B. Karpman, Minneapolis.—p. 1.
30 *Placental Transmission of Creatinin and Creatin. A. Hunter and W. R. Campbell, Toronto.—p. 5.
31 Nutritive Factors in Animal Tissues. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 17.
32 The Two Forms of Glycerin. K. G. Falk and K. Sugiura, New York.—p. 29.
33 New Method for Direct Nesslerization of Ammonia in Urine. J. B. Sumner, Ithaca, N. Y.—p. 37.
34 *Presence of Growth Producing Substance in Cultures of Typhoid Bacilli. A. J. P. Pacini and D. W. Russell, Brooklyn.—p. 43.
35 Studies in Metabolic Changes Induced by Administration of Guanidin Bases. Influence of Guanidin on Urinary Ammonia and Acid Excretion. C. K. Watanabe, New Haven, Conn.—p. 51.
36 Id. Relation between Tetanoid Symptoms of Guanidin Administration and Condition of Acidosis. C. K. Watanabe, New Haven, Conn.—p. 65.
37 Id. Influence of Administration of Calcium on Blood Sugar Content in Rabbits with Guanidin Hypoglycemia. C. K. Watanabe, New Haven, Conn.—p. 73.
38 Stoichiometrical Character of Action of Neutral Salts on Swelling of Gelatin. J. Loeb, New York.—p. 77.
39 Estimation of Nonprotein Nitrogen in Blood. I. Greenwald, New York.—p. 97.
40 Estimation of Creatinin and of Creatin in Blood. I. Greenwald and G. McGuire, New York.—p. 103.
41 *Studies in Calcium and Magnesium Metabolism. M. H. Givens, New Haven, Conn.—p. 119.
42 Inorganic Elements in Nutrition. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 131.
43 Effects of Electrolytes on Gelatin and Their Biologic Significance. Effects of Mixtures of Salts on Precipitation of Gelatin by Alcohol. Antagonism. W. O. Fenn, Cambridge.—p. 141.
44 Relation of Blood Fat to Sex, and Correlation between Blood Fat and Egg Production in Domestic Fowl. O. Riddle and J. A. Harris, New York.—p. 161.
45 Blood Fat in Fowls. D. E. Warner and H. D. Edmond.—p. 171.
46 Preparation of Pure Lecithin; Composition and Stability of Lecithin Cadmium Chlorid. P. A. Levene and C. J. West, New York. —p. 175.
47 Some Hydantoin Derivatives. C. J. West, New York.—p. 187.
48 *Method for Determination of Sugar in Normal Urine. S. R. Benedict and E. Osterberg, New York.—p. 195.
49 Modification of Lewis-Benedict Method for Determination of Sugar in Blood. S. R. Benedict, New York.—p. 203.
50 Studies in Carbohydrate Metabolism. Preliminary Report on Sugar Elimination in Urine of Normal Dog. S. R. Benedict and E. Osterberg, New York.—p. 209.
51 Id. Study of Urinary Sugar Excretion in Two Normal Men. S. R. Benedict, E. Osterberg and I. Neuwirth, New York.—p. 217.

30. **Placental Transmission of Creatinin and Creatin.**—Hunter and Campbell found that the concentrations of creatinin and creatin in the maternal plasma differ little, if at all, from those of the same substances in the fetal. Parturition is accompanied normally, although perhaps not invariably, by a temporary rise in blood creatinin. This effect appears to be illustrated most strikingly among primiparas. The creatin content of the plasma at parturition corresponds with that found normally in association with creatinuria. The concentration of creatin in the whole blood is generally greater in the fetus than in the mother; but the concentration in the corpuscles, as in the plasma, is practically the same in both. The concentration of creatin in the corpuscles of parturient women is greater than in those of nonpregnant women or of men. It would appear that pregnancy is accompanied by a special accumulation of creatin in the corpuscles.

34. **Growth Producing Substances in Typhoid Bacilli Cultures.**—According to Pacini and Russell the typhoid bacillus, in growing, produces vitamin which can be isolated and identified by proper biologic methods. The bearing on the effect of the same on the general metabolism of typhoid patients, and indications of a scientific basis for new methods of feeding these cases, are under investigation.

41. **Studies in Calcium and Magnesium Metabolism.**—The daily urinary calcium and magnesium excretion of nine healthy adults on a diet of natural foods containing more magnesium than calcium ranged from 0.05 to 0.25 gm. calcium and from 0.03 to 0.15 gm. magnesium; on a diet having more calcium than magnesium the limits were 0.12 to 0.47 gm. calcium and 0.05 to 0.23 magnesium. In the nine persons in general more calcium than magnesium was excreted in the urine; or if such was not the case the usual calcium-magnesium relation could be promptly brought about by ingestion of milk. The urinary output of both calcium and magnesium was increased by consumption of milk. Dried skimmed milk was practically as effective as raw milk in influencing the urinary alkali earth excretion. The urinary calcium excretion was always increased after taking calcium lactate. The urinary magnesium excretion was apparently not affected by the introduction of magnesium citrate. Comparable quantities of calcium salts, represented by calcium lactate, were not as efficacious as milk in producing increased urinary excretion of lime. Attention is called to the variation in the relative amounts of alkali earths excreted through the kidneys by different persons. The quantities bear no fixed relation to body weight, but presumably are influenced not only by the diet but also by the tissue reserves, particularly in the bones, of the persons.

48. **Determination of Sugar in Urine.**—The procedure adopted by Benedict and Osterberg is an adaptation of the colorimetric

procedure of Lewis and Benedict for determination of sugar in the blood. Their work with the Myers' modification has convinced us that results by this method are too high (due partly to imperfect removal of creatinin). The method presented is considered under two divisions: (1) the preliminary precipitation of interfering substances from the urine, and (2) the determination of the sugar in the filtrate. They have found that urines can be almost entirely freed from the substances enumerated above by single precipitation with excess of mercuric nitrate in presence of a slight excess of sodium bicarbonate. After subsequent removal of the mercury with zinc dust the filtrates are water-clear, and contain almost no measurable nitrogen, or at least not more than 0.1 mg. per c.c. No creatinin can be detected in the filtrates. The special reagents used in the final method for the determination of sugar in urine are: 1. Mercuric nitrate solution. It is prepared as follows: To 160 c.c. of concentrated nitric acid in a beaker add in small portion, 220 gm. of mercuric oxid. When all is dissolved heat the mixture to boiling, cool and add 60 c.c. of 5 per cent. sodium hydroxid solution. Make up to 1 liter and filter. Keep in a brown bottle. 2. Picrate-picric acid solution. To 500 c.c. of 1 per cent. sodium hydroxid solution in a liter flask or stoppered cylinder add 36 gm. of picric acid, and about 400 c.c. of hot water. Shake occasionally until the picric acid is dissolved, cool and dilute to 1 liter.

The procedure for the sugar determination is as follows: Measure 15 or preferably 20 c.c. of urine into a 500 c.c. beaker and add an equal volume of the mercuric nitrate solution and mix. Then add solid sodium bicarbonate in moderate quantities, with gentle shaking, until frothing ceases and the mixture reacts alkaline to litmus paper. Filter at once through a dry filter into a small dry flask or beaker. To the perfectly clear filtrate add a pinch of zinc dust and 1 or 2 drops of concentrated hydrochloric acid. Shake and let stand for about five minutes. Filter through a small dry filter into a dry test tube or small beaker. From 1 to 4 c.c. of this final filtrate (the volume to be used depends on the sugar content of the original urine, from 0.5 to 2 mg. of sugar is the quantity desired) are measured into a large test tube, which should be graduated to indicate 12.5 and 25 c.c. Where less than 4 c.c. of filtrate have been used enough water is added to make exactly 4 c.c. and 1 c.c. of 20 per cent. (anhydrous) sodium carbonate solution is added. Four c.c. of the picrate-picric solution is now added, the tube plugged with cotton, and placed in boiling water for ten minutes. The tube is then removed, cooled to room temperature with the help of running water, and the contents are diluted with water to the 25 c.c. mark, or to 12.5 c.c. if the quantity of sugar present was much below 1 mg. The colored solution is then matched (within half an hour) in a colorimeter against a standard prepared by treating 1 mg. of glucose in 4 c.c. of water, just as the final filtrate was treated; or against a permanent standard of picramic acid solution or potassium dichromate.

Benedict and Osterberg have found that the best permanent standard is to be prepared from pure picramic acid, together with some of the picrate-picric acid solution used in the determination. This standard solution has the following composition: To 105 c.c. of exactly 0.01 per cent. picramic acid solution in 0.02 per cent. sodium carbonate solution, add 0.5 c.c. of 20 per cent. sodium carbonate solution, and 15 c.c. of the picrate-picric acid solution. Then dilute to 300 c.c. with distilled water. Starting with pure picramic acid, the depth and quality of the color of this solution duplicate very exactly that obtained from 1 mg. of glucose dissolved in 4 c.c. of water, treated as described for the final urine filtrates, and the colored solution diluted to 25 c.c. The standard in the colorimeter should be set at a height of 15 mm.

Journal of Laboratory and Clinical Medicine, St. Louis

April, 1918, **3**, No. 7

52 *Investigation of Certain Phenomena of Allergy with Special Reference to Respiratory and Circulatory Systems in Relation to Cause of Death. M. D. Pelz and D. E. Jackson, St. Louis. —p. 387.

53 *Studies on Immunity with Special Reference to Complement Fixation. A. Blumberg, Salt Lake City.—p. 397.

54 *Meningitis at Camp Greene. P. G. Woolley, Charlotte, N. C. —p. 409.

55 *Intravenous Use of Red Mercuric Iodid. L. W. Rowe, Detroit. —p. 412.

56 Outline for Combined Teaching of Pathology and Bacteriology in Small Medical Colleges. E. Kellert, Albany.—p. 416.

57 Clinical Method for Determining Respiratory Exchange in Man. R. G. Pearce, Cleveland.—p. 420.

58 *Highly Differentiating Polychromatic Toluidin-Blue Stain. M. Barron, Minneapolis.—p. 432.

59 Ordinary Brown Mice Substitute for White Mice in Pneumococcus Grouping. O. J. Walker and W. J. Bruce, Oklahoma City. —p. 434.

52. **Allergic Phenomena and Cause of Death.**—From the experimental evidence obtained by Pelz and Jackson are certain that on the injection of the antigen in highly sensitized spinal dogs, the asphyxia produced by the acute bronchial constriction may readily be the cause of death, and that the phenomenon occurs with the liver and other abdominal viscera wholly removed from the circulation. The phenomena occur in those dogs sensitized to egg white equally as well as in those sensitized to normal horse serum. The bronchial and blood pressure changes produced in acute anaphylactic shock bear a striking and almost complete resemblance to those produced by certain opium alkaloids, such as codein, heroin, peronin, etc. For producing relaxation of the bronchioles, and aiding in recovery in acute anaphylactic shock, epinephrin is the most dependable substance, but to produce the best effects the drug must be injected early, before the bronchoconstriction has had time to become too intense.

53. **Studies on Immunity.**—The authors show that true antigens (that is, antigens which contain the etiologic factor of the disease, emulsified or autolyzed) will work only where there is a polymorphonuclear leukocytosis present. While tuberculosis is a disease presenting a lymphocytosis, it will fix the complement with a specific antigen, which, however, is not a bacterial emulsion, but a heated egg medium culture containing small amounts of lipoid. Tissue extracts of mammals, birds, reptiles and fishes may serve as useful antigens for the diagnosis of syphilis. If normal urine is added, the complement of the hemolytic system is affected without the presence of a specific antigen. The presence of hemolysis in the test of the fourth group indicates either some type of affection of the kidney (even when no albumin or casts are demonstrable) or pregnancy, the two conditions frequently being separable by the clinical history of the patient. The absence of hemolysis in a hemolytic system to which urine is added speaks against the condition of pregnancy. In complement fixation without an antigen, reaction affecting the third tube (which serves as control tube and should not hemolyze) speaks for nephritis, rather than pregnancy.

54. **Meningitis at Camp Greene.**—Statistics at hand indicate that there have been between 5 and 7 per cent. of carriers in Camp Greene. In the only organization which made use of systematic nasal sprays since the first of the year not a single case developed, and in those organizations in which sprays were resorted to after the appearance of the disease no other cases appeared. Woolley says that this may be merely coincidental, but when one discovers that also following the adoption of sprays the total sick rate falls, especially that due to respiratory diseases, and bears in mind the current conception that the meningococci inhabit the nasal passages, one comes to have a very healthy respect for dichloramin-T as an agent for the prevention of diseases of upper respiratory tract origin.

55. **Intravenous Use of Mercuric Iodid.**—Rowe claims that red mercuric iodid in combination with an equal amount of potassium iodid can be injected in solution into animals intravenously with comparative safety if reasonable care is exercised in the manner of injection and in the size of the dose injected. It is very little if any more toxic than mercuric chlorid, safer for intravenous use, and of greater germicidal efficiency.

58. **Differentiating Polychromatic Toluidin-Blue Stain.**—The preparation of the stain used by Barron is as follows: toluidin-blue, 1.0; potassium carbonate, 1.0; distilled water, 400.0. Boil solution in glass beaker until it is reduced to

300 c.c. Cool; than add: toluidin-blue, 2.0; sodium chlorid, 3.0; glacial acetic acid, 12.0; alcohol, 15.0. Stir mixture until ingredients are completely dissolved. It is ready for use at once, and can be used over and over again. It does not precipitate and keeps indefinitely. The following technic is employed in staining frozen sections for rapid diagnosis. A piece of tissue which is not more than 3 mm. in thickness is dropped into boiling 10 per cent. formaldehyd solution for about one minute. Fresh tissue without hardening may be used in many cases but the sections are more difficult to handle. The tissue is cut with the freezing microtome, and the sections are placed in a dish containing physiologic salt solution. The sections are quickly straightened out and carried over into a small dish of the stain where they are left for about fifteen seconds. They can be left for a much longer time without overstaining. The sections are then transferred to another dish of physiologic salt solution where they are rapidly washed for a few seconds to remove the excess of stain, and then are at once mounted in the same solution on a slide, and a coverslip applied. The section is now ready for examination. The entire process, from the time the section is cut to the completed preparation for microscopic study, need not take more than one minute in most instances.

Journal of Nervous and Mental Disease, Lancaster, Pa.

April, 1918, 47, No. 4

60 Influence of Angle of Section on Measurements of Cortex Depth and on Cyto-Architectonic Picture. S. T. Orton, Philadelphia.—p. 241.
61 *Unilateral Ophthalmoplegia; Report of Case Due to Carotid Aneurysm. H. Viets, Boston.—p. 249.
62 *Medical Treatment of Exophthalmic Goiter; Special Reference to Use of Corpus Luteum Extract. H. H. Hoppe, Cincinnati.—p. 254.
63 *Intracranial Treatment of Paresis. H. A. Cotton and W. W. Stevenson, Trenton, N. J.—p. 262.

61. Unilateral Ophthalmoplegia Due to Carotid Aneurysm.—An unusual case of aneurysm of the right intracranial carotid artery is reported by Viets. The symptoms were: complete ophthalmoplegia with sensory disturbances of the trigeminus. The aneurysm was seen at operation. No etiologic factor was found. Rupture has not taken place after seven months of symptoms. The author has failed to find in the literature a report of a similar case.

62. Medical Treatment of Exophthalmic Goiter.—Hoppe has treated about twenty cases of exophthalmic goiter. The ordinary Forchheimer treatment was attended with only indifferent success. The combination, however, of quinin hydrobromate, extract belladonna with the extract corpus luteum was found to be rapidly beneficial in nearly all the cases and the improvement was usually so rapid and so marked, in a few days to a week, to convince Hoppe that rest, diet, hygienic measures, all of which he had used for twenty years before, could not account for the result, but that the corpus luteum was the active therapeutic agent.

63. Intracranial Treatment of Paresis.—The authors make use of two methods—the method of Hammond and Sharpe and the method of Wardner. The difference between these two methods is that in the former the serum is introduced into the ventricle and in the latter it is introduced under the dura. Six or more treatments are given by the former and then several of the latter, or alternating them. The authors have modified the methods of intracranial treatment, both the intraventricular and the subdural, so that the time necessary for these operations has been materially reduced. They do not give a general anesthetic, but merely cocainize the scalp.

The results of four years' experience in the treatment of cerebrospinal syphilis are summarized as follows: 1. The intracranial (either the intraventricular or subdural) method is the most efficacious method in the treatment of paresis and should be the method of preference. 2. The intraspinal method is the most efficient one for the treatment of tabes and syphilitic meningitis. 3. Arsphenamin is the best drug for the treatment of cerebrospinal syphilis and preferable to the diarsenol brand and other substitutes. 4. The mercurialized serum of Byrnes is of doubtful value, as it is not of sufficient potency to destroy the spirochete. 5. The success of any method of treatment depends on the stage in which the disease is treated, and the earlier the stage the better the outcome of the treatment. Therefore, if possible, the disease should be diagnosed in the preparetic stage or as soon as symptoms are present. 6. Every case of syphilis should have an examination of the spinal fluid at frequent intervals after all symptoms of the acute stage are lost, especially if the blood Wassermann remains positive after sufficient treatment has been given. 7. All cases of paresis can be arrested and possibly cured if treatment is begun early enough. 8. Physicians should be taught to recognize the importance of an early diagnosis and trained to make such a diagnosis, so that cases can be referred for treatment before the process has gone too far for treatment to be effective. 9. The treatment of paresis should be undertaken by all institutions for the insane, and all cases treated, as it is a difficult matter to decide whether a given case has reached the stage when treatment would be useless.

Medical Record, New York

May 4, 1918, 93, No. 18

64 Narcotic Drug Addict. E. S. Bishop, New York.—p. 751.
65 Problem of Narcotic Addiction of Today. C. F. Stokes, New York.—p. 755.
66 Cellular Changes in Various Forms of Acute Leptomeningitis. G. B. Hassin, Chicago.—p. 760.
67 Plea for Use of Potassium Nitrate in Treatment of Cancer. E. P. Robinson, New York.—p. 764.
68 Some of Rabelais' Ideas of Stomach. D. W. Montgomery, San Francisco.—p. 769.

Military Surgeon, Washington, D. C.

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69 Manifest Pulmonary Tuberculosis. G. E. Bushnell.—p. 383.
70 *Report on Neurocirculatory Asthenia and Its Management. T. Lewis.—p. 409.
71 Malingering in U. S. Troops, Home Forces, 1917.—p. 427.
72 *Foot Strapping. D. J. Morton and R. T. Taylor.—p. 450.

70. Neurocirculatory Asthenia.—Lewis points out that this is not a new and strange syndrome, but a condition frequently seen in civilian practice in a milder form after an attack of grip, typhoid, severe tonsillitis, or scarlet fever. The general type of patient is one who is readily exhausted, physically and psychically. His subjective symptoms are referable chiefly to the circulatory apparatus and nervous system. He complains not constantly perhaps of dyspnea on effort, of feeling generally "shaky," of pains in the left chest, of palpitation, headache, dizziness and faintness. He is usually susceptible to cold and becomes readily fatigued. He is often quite aware of his tremor and complains of the fact that he perspires too profusely. Lewis suggests a new name for this condition, neurocirculatory asthenia. He suggests further that all medical officers of the American forces should learn to recognize the clinical picture of this syndrome, and a certain selected number should have the opportunity of studying such cases and of learning by actual experience to employ a system of graduated exercises as a therapeutic measure and as an aid to categorization. To limit the occurrence of this disorder in a prophylactic way it is suggested that: (*a*) Measures be taken for the early recognition of cases of neurocirculatory asthenia, that is, at the time men are called to service and at the training camps. (*b*) Men who are seen to flag or show signs of breathlessness by their drill instructors should be reported to the medical officer and thoroughly overhauled from the point of view of this syndrome at an early date. (*c*) The period of convalescence after infectious diseases be made sufficiently long, and, after complete recovery, the soldiers be gradually hardened before returning to full duty. It is strongly recommended, above all, not to transport soldiers suffering from this disorder overseas for active service, as it is now known that their period of service on full duty is short.

72. Foot Strapping.—A method of strapping with adhesive plaster for foot strains and for pronated and flattened feet is submitted by Morton.

Nebraska State Medical Journal, Norfolk

April, 1918, **3**, No. 4

73 Medical Inspection in Public Schools of Omaha. E. T. Manning, Omaha.—p. 105.
74 Nephritis. A. Sachs, Omaha.—p. 109.
75 Diagnosis and Management of Cardiovascular Renal Disease. J. W. Shuman, Sioux City, Iowa.—p. 114.
76 Treatment of Certain Fractures Occurring in or Near Joints. C. H. Newell, Omaha.—p. 116.
77 Physical Examinations of Applicants for Aviation Service, U. S. Army. F. M. Conlin, Omaha.—p. 120.
78 Prophylaxis. J. L. Sutherland, Grand Island.—p. 124.
79 Smallpox. R. W. Fouts, Dawson.—p. 130.

Neurological Bulletin, New York

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80 Hemorrhage into Basal Cisterns and Ventricles of Brain. F. Tilney and L. Casamajor, New York.—p. 161.
81 Multiple Sclerosis Associated with Internal Hydrocephalus. S. P. Goodhart and J. H. Globus, New York.—p. 175.
82 Infantile Pseudobulbar Palsy with Choreo-Athetosis. O. S. Strong, New York.—p. 179.
83 Case of Amyotrophic Lateral Sclerosis. I. S. Wechsler, New York. —p. 183.
84 Chorea Followed by Paralysis, Simulating Anterior Poliomyelitis. C. A. McKendree, New York.—p. 187.
85 Two Cases of Superior Alternating Hemiplegia—Weber's Syndrome. J. H. Nolan and F. Tilney, New York.—p. 192.
86 Thalamic Syndrome with Left Hemianopsia and Right Optic Atrophy. O. S. Strong, New York.—p. 199.

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87 Liberty Loan and Physician. A. Jacobi New York.—p. 769.
88 Three Things Liberty Bonds Can Do. R. T. Morris, New York. —p. 769.
89 Morbid Impulses. A. Gordon, Philadelphia.—p. 771.
90 Genito-Urinary Clinic. N. P. Rathbun, Brooklyn.—p. 774.
91 Trend of Modern Dermatologic Research and Its Bearing on General Medicine. M. Scholtz, Cincinnati.—p. 775.
92 Factors in Causation of Tinnitus Aurium. J. L. Maybaum, New York.—p. 780.
93 Value of Chemical Tests on Serums and Spinal Fluids of Syphilitics. B. Mann and A. I. van Saun, Albany.—p. 783.
94 An Air Expansion Pipet Reagent Bottle. J. I. Fanz, Philadelphia. —p. 787.
95 Biologic Law and Human Health. J. S. Lankford, San Antonio, Texas.—p. 788.
96 Orthopedic Principles Applicable to War Cripples as Aid to Vocational Occupation. J. M. Taylor, Philadelphia.—p. 791.
97 Neuropsychiatry and Mobilization. P. Bailey, Washington, D. C. —p. 794.

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98 True Epileptic. L. P. Clark, New York.—p. 817.
99 Relation of Carbohydrates to Protein Synthesis. N. W. Janney, New York.—p. 824. To be concluded.
100 Clinical Significance of Fecal Analysis. L. W. Kohn, Philadelphia. —p. 829.
101 New Method of Preserving and Mailing Specimens for Wassermann. W. L. Snider, Hot Springs, Ark.—p. 831.
102 When a Cancer Is Not a Cancer. E. V. De Pew, San Antonio, Texas.—p. 832.
103 Two Stage Operation for Tendon Suture in Hand. J. E. Fuld, New York.—p. 833.
104 Hydronephrosis as Underlying Cause in Attacks of Acute Abdominal Pain. S. P. Martin, Buffalo.—p. 834.
105 Reconstructing Crippled Soldiers of France. D. C. McMurtrie, New York.—p. 839.

Public Health Journal, Toronto

April, 1918, **9**, No. 4

106 Infant and Child Welfare Work. A. Brown, Toronto.—p. 145.
107 Mothers' Pensions vs. Provincial Aid for Children. A. M. Huestis, Toronto.—p. 163.
108 Child Welfare Clinics. E. M. Forsythe, Toronto.—p. 169.
109 Birth Registration and Infant Welfare. R. E. Mills, Toronto.—p. 171.
110 Essentials of Family Case Work. R. C. Dexter, Montreal.—p. 173.

Ohio State Medical Journal, Columbus

May, 1918, **14**, No. 5

111 Health Insurance. E. R. Hayhurst, Columbus.—p. 270.
112 Seminal Vesiculitis. I. E. Seward, Cleveland.—p. 275.
113 Chorio-Epithelioma; Report of Case. K. Becker, Toledo.—p. 278.
114 Progress in Therapeutics for 1917. C. W. McGavran, Columbus. —p. 281.

Rhode Island Medical Journal, Providence

May, 1918, **2**, No. 5

115 Eyestrain as Related to General Practice. F. J. McCabe, Providence.—p. 71.
116 Review of One Hundred Consecutive Cases of Acute Diseases of Appendix, Gallbladder, Duodenal and Gastric Ulcers. F. V. Hussey, Providence.—p. 75.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 6, 1918, **1**, No. 2988

1 Case of Huntington's Chorea. C. Allbutt.—p. 389.
2 Necessity for Fuller Consideration of Local Processes of Disease and Repair in Treatment of Pulmonary Tuberculosis. H. M. Davies.—p. 390.
3 Importance of Regulating Fat-Intake in Diabetes Mellitus. P. J. Cammidge.—p. 393.
4 *Phlebotomus Fever. J. H. Hartley.—p. 395.
5 Id. J. A. Delmege and C. S. Staddon.—p. 396.
6 Involvement of External and Internal Popliteal Nerves in Lesions of Sciatic Nerve. T. E. Hammond.—p. 397.
7 Epidemiology of Meningococcal Meningitis, of Cerebrospinal Fever. A. M. N. Pringle.—p. 398.
8 Fatal Case of Paratyphoid B Simulating Typhus. P. S. Hichens and E. J. Boome.—p. 398.

April 13, 1918, **1**, No. 2989

9 *Nature and Symptoms of Cardiac Infection in Childhood. F. J. Poynton.—p. 417.
10 *Shell Shock and Neurasthenia in Hospitals in Western Command. E. W. White.—p. 421.
11 *War Psychoses Occurring in Cases with Definite History of Shell Shock. R. Eager.—p. 422.
12 Early Stage of Hysteria. M. Culpin.—p. 425.
13 Medical Aspects of Food Problem. R. Hutchison.—p. 426.

4. **Phlebotomus Fever.**—An outbreak of phlebotomus fever (sandfly fever) occurred in a squadron of yeomanry on outpost duty in mid-Egypt in the middle of the summer of 1917. The post was on the western edge of the cultivation, and Hartley was in medical charge of the unit. Of the total strength, 86.4 per cent. were infected. The incubation period was from four to seven days. The onset was very sudden, accompanied with severe malaise, headache, and suffusion about the eyes and postorbital pain. Pain in the lumbar region was generally intense, and pain and cramp in the limbs occurred. Constipation was nearly always present and profuse sweating. The temperature rose quickly to 102.5 or 103, and on a few occasions to 105. After twenty-four hours the pyrexia diminished, and at the end of three days, fell to normal. The pulse was not correspondingly accelerated—it was seldom above 80; it became soft and weak and the cardiac condition required attention. The suddenness of the onset was the marked feature. Subsequent debility was a marked feature considering the shortness of the acute stage, but many managed to recover sufficiently to return to light duty after fourteen days.

9. **Cardiac Infection in Childhood.**—Among 524 children, all under 12 years of age, examined by Poynton, the following conditions were present: heart disease in 293; chorea in 268; arthritis and arthritic pains in 267; sore throats in 147; nervous manifestations other than chorea in 80. Two important groups are recognized by the author: 1. Cases with sore throat, arthritis, and morbus cordis. 2. Cases with chorea and morbus cordis.

10. **Shell Shock and Neurasthenia.**—The mental symptoms noted by White in over 800 cases of shell shock and neurasthenia have occurred in the following order of frequency: confusional, melancholic, delusional, stuporose and maniacal. Ir many patients the memory was impaired for recent events and day to day actions and happenings, and there is a blank in regard to the incidents of their shell shock period. Memory for recent events to daily life, however, improves as the case progresses to recovery. The moral tone of the individual may be changed for the worse, and this change of character may be out of all proportion to the severity of the original shell shock. With it there may be altered feelings, affections, temper, and habits generally. From the medicolegal standpoint this morbid mental state is very important in regard to responsibility, and must be duly recognized. The patients with acute symptoms are kept in bed, but made to get out and walk a few steps every day, wher able. Absolute quiet and fresh air (veranda life if weather permits) are essential, and no stimulants can be allowed. The milder cases with tremors and those with hysterical or pithiatic, and mild hystero-epileptic symptoms improve under bromid and valerian, nux vomica, arsenic, and other nerve tonics, but

environment and habits of life play an even more important part than drugs. Carefully controlled employment of mind and body is most necessary to expedite recovery and divert the patient's thoughts. He must be outdoors whenever the weather permits, engaged in gardening, wood-cutting, and outdoor sports and games, and when indoors, in workshops, and in taking part in the various amusements of home life. Clear, bracing air is very important.

11. **War Psychoses in Cases of Shell Shock.**—The following were by far the commonest symptoms noted by Eager in an examination of over 4,000 cases: amnesia, melancholia, mental confusion, delusion and hallucinatory disturbances. The condition of stupor was also met with, but was not so common as the aforementioned, and in some instances the sequence of events showed that cases which had been admitted to the hospital originally as definite cases of shell shock, have subsequently passed into a neurasthenic condition, which again has not improved, but drifted into states closely resembling dementia praecox. Retardation of thought was a pronounced symptom in the majority of cases; mutism and deafness were also met with. Associated with the above symptoms were headache, insomnia, terrifying dreams, general nervousness, and varying strange sensations in the head. As regards the physical signs, the deep reflexes were always very much increased, tremors were present almost universally in the tongue and outstretched hands, and the pupils were generally dilated. Frequently patients complained of throbbing sensations in the precordia, clamminess of the skin, and appeared before one as highly strung and emotional.

Bulletin of Naval Medical Association of Japan, Tokyo

March, 1918, No. 18

14 Changes of Carcinoma in Breast After Roentgen-Ray Treatment, with Special Reference to Paget's Disease of Nipple. J. Ogata.—p. 1.
15 Case of Tuberculosis of Penis. T. Kurita.—p. 3.

Indian Medical Gazette, Calcutta

February, 1918, 53, No. 2

16 Chlorination of Drinking Water Supplies in Field. P. Hehir.—p. 41.
17 *Intravenous Injections of Tartar Emetic in Treatment of Malaria. T. A. Hughes.—p. 42.
18 Quinin in Malarial Prophylaxis. A. R. S. Anderson.—p. 45.
19 Treatment of Cerebrospinal Syphilis by Means of Sero-Arsenous and Mercurie Iodid. I. F. Frost and O. I. Dewadatta.—p. 48.
20 Indian Crèche in Bangalore. S. Amritaraj.—p. 51.
21 Tobacco Fleas and Plague. S. Mallanah.—p. 53.

17. **Tartar Emetic in Treatment of Malaria.**—The observations recorded by Hughes were made in the spring of 1917 at an Indian hospital in German East Africa. The cases, except three, were not chosen, some being severe and some slight. The exceptions were three cases of blackwater fever, which after the blackwater had disappeared developed fever with parasites in the peripheral blood. There being some doubt as to the advisability of administering quinin except in small doses to such cases, tartar emetin intravenously was tried. One case had a relapse of blackwater after an intramuscular injection of 10 grains of quinin bihydrochlorid. In all, thirteen cases were treated, ten of subtertian, two of benign tertian, and one of quartan. Two of the subtertian cases and the quartan case were blackwater convalescents. The drug was injected in 2 per cent. solution in normal saline by means of a 10 c.c. syringe into a vein at the bend of the elbow, the quantities administered varying from 3 to 14 centigrams, given as a rule every second or third day. At first the smaller quantities were used beginning with 3 or 4 centigrams and working up to 8, while in later cases 10 centigrams was given as the initial dose and increased to 14 centigrams. With the latter dosage toxic symptoms manifested themselves, coughing and vomiting being sometimes troublesome.

Care had to be taken that none of the solution escaped into the tissues surrounding the vein. This happened on two occasions and gave rise to much local pain, and eventually in one case to suppuration. During the administration of tartar emetic all quinin was withheld, except in one case. So far as conclusions can be drawn from the few cases here mentioned, the results would tend to show that tartar emetic is not a cure for subtertian malaria, at least in nontoxic doses. Curative effects were observed in varying degrees only when doses toxic to the patient were given. This bears out Greig's statement that tartar emetic appears to be rather a general protoplasmic poison than a specific poison for the malarial parasite.

Journal of Tropical Medicine and Hygiene, London

April 1, 1918, 21, No. 7

22 Possible Intermediary Hosts of Schistosoma in South Africa. F. G. Cawston.—p. 69.

Practitioner, London

April, 1918, 100, No. 4

23 Prevention and Treatment of Hemorrhage in Enucleation of Tonsils. W. Hill.—p. 301.
24 Hemorrhage Following Removal of Tonsils and Its Treatment. I. Moore.—p. 334.
25 Pro-Ether. D. J. Munro.—p. 362.
26 *Impetigo Contagiosa as Possible Cause of Acute Nephritis; Report of Cases. W. F. Stiell.—p. 368.
27 Masturbation. J. Hepburn.—p. 372.
28 Prevention of Measles. J. A. Milne.—p. 376.
29 Hematuria; Report of Two Cases. W. H. S. Armstrong.—p. 379.
30 False Aims in Medicine. O. C. Gruner.—p. 381.
31 *Historical Case of Rickets. C. Burland.—p. 391.

26. **Impetigo Contagiosa as Cause of Nephritis.**—Stiell reports five cases of acute nephritis resulting from typical impetigo contagiosa. From an analysis of these five cases, it seems probable that an acute streptococcal impetigo is capable of producing an acute nephritis, every bit as severe as that following an ordinary attack of scarlatina. Stiell does not suggest that every case of impetigo subsequently develops nephritis as a complication, but, at the same time, he does consider that the risk of this occurrence, even in efficiently treated cases, is quite as great as in scarlatina, and that impetigo is frequently and explanation of many of the sudden and acute cases of nephritis, occurring in children, for which formerly there has been no satisfactory explanation. He suggests that in a similar manner it is possible that many of the cases of so-called "trench nephritis" in soldiers are, in fact, a complication either of an impetiginous pediculosis or an impetiginous scabies.

31. **Historical Case of Rickets.**—Burland republishes an account of the medical examination of the remains of Princess Elizabeth, daughter of King Charles I., who died at Carisbrook Castle, September 8, 1650, written by E. P. Wilkins in 1856.

Archives des Maladies du Cœur, etc., Paris

February, 1918, 11, No. 2

32 *The Blood in Typhus. D. Danielopolu.—p. 49.
33 *Aortic Insufficiency from Air Concussion. A. Cramer.—p. 66; J. Brossard and J. Heitz.—p. 71.
34 *Pulsus Alternans and Digitalis. Carpentier.—p. 79.

32. **The Blood in Typhus.**—More or less pronounced leukocytosis was evident in the first week in 62 per cent. of the 250 typhus patients examined, and in the second week in 96 per cent. In the severer cases the leukocytes numbered from 20,000 to 128,000, the leukocyte curve thus serving as a reliable index of the toxic action of the disease. More than 20,000 indicates an unfavorable outcome. A leukocytosis rapidly jumping from 25,000 to 50,000 and 90,000 served to differentiate typhus in one puzzling case in which the temperature dropped early to normal and below. The hyperleukocytosis also revealed associated typhus in some typhoid cases. Any complicating inflammatory process in typhus is liable to increase the leukocytosis, but this has no bearing on the prognosis. The blood shows constantly mononuclear leukocytes with protoplasm staining intensely blue, excentric nucleus, and no granulations, but this type of "plasmatic cells" are found in certain other infectious diseases, although less numerous.

33. **Aortic Insufficiency from Air Concussion.**—Cramer's patient presented the signs of severe aortic insufficiency which had developed after the young soldier had been flung several feet into the air by the air concussion from a bomb. He had previously been healthy and had always escaped the diseases which predispose to heart disease, but he is now one of the *grands blessés médicaux* of the war.

Brossard and Heitz report two similar cases of traumatic aortic insufficiency following shell shock. In one the valvular symptoms were pronounced at once; in the other they developed in the course of a few days. The wind from an exploding bomb, without fall or contusion, even with the man already flat on the ground, we know is capable of inducing hemorrhage in the nerve centers or rupture of both lungs as in Sencert's case, injury of the optic layer, as in Léri's case, and it was evidently responsible for the laceration of the aortic valve, the most fragile of all the valves, in these three cases.

34. **Pulsus Alternans.**—Carpentier compares recent works on pulsus alternans with Windle's study of the effect of digitalis on alternance of the pulse in seventy cases. None of Windle's patients survived for more than three years, but some improvement under digitalis was constant. The pulsus alternans was never accentuated; it generally became attenuated under the digitalis and during the following two or three weeks, except in the cases with arteriosclerosis. Windle does not seem to have had his attention called to the frequency of syphilis in the antecedents in cases of pulsus alternans. Some others have reported syphilis certain in nine and probable in four others in forty cases of alternance, or 15 per cent. in other groups. In Windle's experience, the pulse never assumed the alternans type during treatment with digitalis except in two cases, and in one of these it subsided under the continued use of tincture of digitalis. He pushes it until nausea or coupled rhythm appear, giving from 12 to 28 gm. of the tincture (*Quarterly Journal of Medicine*, 1917, **10**, No. 40), according to the severity of the case. The effect is exhausted in two or three weeks, and the digitalis must then be resumed.

Archives de Médecine et de Pharm. Militaires, Paris

December, 1917, **68**, No. 6

35 *Operative Indications for First Treatment with Multiple War Wounds. J. Okinczyc and H. D. Clavaud.—p. 833.
36 *Comparative Study of Antiseptic and Aseptic Treatment of Wounds. F. Ferrari and A. Delotte.—p. 858.
37 *War Nephritis. C. Laubry and L. Marre.—p. 885.
38 Camp Epidemic of Bacillary Dysentery. C. Lesieur, F. Pellagot and P. Jacquet.—p. 903.
39 Malaria in Morocco. L. Netter and J. Guilhem.—p. 911.
40 Factitious Albuminuria. Serr, Biron and Brette.—p. 935.

January-February, 1918, **69**, No. 1-2

41 *Transactions of the Third Conférence Chirurgicale Interalliée. —p. 1.

35. **The Indications with Multiple Wounds.**—Okinczyc and Clavaud describe twenty-three cases in which the large number of wounds seemed to forbid any attempt at operative measures, but in which they succeeded in enlarging the limits of the possible and saving life in many of these non-transportable cases. The decision as to whether to operate or not should be made in from thirty to forty-five minutes during which time heat and other measures to combat shock are applied. Heating longer than this predisposes to hemorrhage. If the radial pulse is 120 or over or is imperceptible at this time, there is little hope from any intervention. Two of the men had no perceptible radial pulse for twenty-four or thirty-six hours, but then it reappeared and the men recovered after the amputation done then. Roentgenoscopy is indispensable to show the number and location of the multiple projectiles. In eleven cases of abdominal wounds with numerous wounds elsewhere, three of the men recovered after a thorough abdominal operation. Laparotomy was done in one case merely to relieve the atrocious pain from blood and bowel content loose in the abdomen. The man died the next day, but without suffering further pain. Anti-tetanus serum should be given once a week for three weeks if there are still projectiles left in the tissues. The bleeding wounds should be attended to first, and if there are several on one limb, the upper one first. Injured joints and bones should be given special attention to ward off complications. Amputation of a limb with several grave wounds does away with multiple sources of shock and almost certain infection. Each one of these *polyblessés* cases is a new problem in itself, and it takes courage to attempt the impossible, knowing that the outcome at best will probably be vicious stumps or badly healed wounds.

36. **Secondary Suture of Wounds.**—Ferrari and Delotte analyze their experiences with the Carrel and other methods for preparing a wound for suture. They have learned never to suture a wound that looks bad, even if the bacteriologic findings are favorable. The findings would not be so favorable if every spot of the entire area of the wound could be tested. On the other hand, when the wound looks good and there seems to be a good cellular reaction, they do not hesitate to suture even with five or six diplococci to the field. They estimate the cellular reaction by the number of blood cells that are not polynuclear whites, and they feel safe in suturing when from 15 to 30 per cent. of the leukocytes are mononuclears. They suture without draining or with only a filiform drain, ready to clip one or two of the hairs if need arise in the next few days. In five cases they preceded the suture with an intravenous injection of a polyvalent serum against the agents of inflammation and suppuration. The suture healed smoothly in each case. The main thing in suturing is not to leave any of the walls not in contact; any spaces left are liable to fill up with blood. The hematoma is the greatest and most frequent danger, and hence we cannot be too careful in insuring hemostasis. Fever the same or the following day after suture is often due merely to hematoma, which can be easily evacuated, and healing proceeds undisturbed, especially when the cavity is rinsed out with ether poured in through the drains or between the stitches. The other dangers are the cutting through of the suture threads where the skin is too tender; and gangrene of the flap drawn too tight.

37. **The Nephritis Service.**—The soldiers with pathologic albuminuria are sent to the service arranged for this purpose by Laubry and Marre, and they describe the methods for diagnosis and treatment, with the outcome, in 200 cases of nephritis. Each man has his "renal certificate" on which are recorded the curve of urine output, the chemical and microscopic findings in the urine, the findings in regard to chlorids, with and without alimentary tests, the urea content of the blood, and the Ambard coefficient, also the response to the methylene blue test of the permeability of the kidney, and the arterial pressure. If the man recovered enough to return to the ranks, the regimental medical officer was sent confidentially a copy of this *fiche rénale*. If the man was unfit for duty, it served as a basis for his discharge from the army.

41. **Surgical Conference.**—Some of the conclusions at this third conference were mentioned in these columns May 18, p. 1520. There were ten American army medical officers present, seven British, seven Belgian, eight French, two Japanese and one Canadian, Italian, Portuguese and Serbian. This bulky volume of 365 pages with twenty-four plates reproduces the communications presented by the various speakers, with the discussions. A fourth conference has been held since, and the conclusions adopted are summarized below, Abstract 69.

Archives Mens. d'Obstét. et de Gynécologie, Paris

October-December, 1918, **6**, No. 10-12

42 *Social Problems Affecting the Mother and Child. P. Bar.—p. 273; Welfare Work for Mothers and Infants in Paris District during the War. Id.—p. 275; For Pregnant and Nursing Women in Factories. Id.—p. 287; Repression of Criminal Abortions. Id.—p. 333.
43 The Midwives of France. P. Bar.—p. 385.

42. **Social Problems Affecting the Mother and Child.**—Bar remarks that the war has deprived the medical schools and the hospitals of most of the men devoted to scientific research, while, on the other hand, the tragic events of the war render more than ever necessary the study of medico-social questions involving the very life of the nation. Hitherto the indifference of too many of the politicians and the neglect by too many officials has left these questions unsolved as of negligible importance. He urges that a systematic campaign must be undertaken against the plagues which are the capital causes of depopulation: syphilis, tuberculosis, alcoholism, voluntary birth control, etc. He then reviews and comments on the discussions held recently in various scientific societies, the Prison Society, the decrees

of the minister of munitions and the laws enacted affecting mothers and infants and prospective mothers, at home and in the factory.

Bulletin de l'Académie de Médecine, Paris

March 19, 1918, **79**, No. 11

44 *The Toxicity of Eggs. G. Linossier.—p. 237.
45 The Terminal Nerve. A. Nicolas.—p. 250.
46 *Vaccination of Pacific Ocean Islanders against Typhoid.—G. Laroche and Mazet.—p. 252.
47 Spontaneous Alteration of Atoxyl. François.—p. 255.
48 *Film Treatment after Mastoid Operation. Daure.—p. 258.

44. **Toxicity of Eggs.**—Linossier remarks that there seems to be a tendency now to disparage eggs as liable to prove toxic under certain conditions, even when quite fresh. He has made a special study of the subject for several years, having published an article on it in 1905. His present conclusions are to the effect that there is undoubtedly some substance in eggs which has a toxic action on certain predisposed persons. The predisposition is often congenital. When it is acquired, it seems to be connected with liver and intestinal disturbance. The toxic substance is probably a toxalbumin, and it is destroyed by heat. All that is necessary is to coagulate all the albumin in the egg, in the yolk as well as in the white. He remarks that the reason why cooked egg seems to be harder of digestion than raw, is because it is digested in the stomach, while the raw egg is passed on undigested, and is not hydrolyzed until it reaches the intestines. He warns against prolonging the action of heat after coagulation is complete, as the harder the coagulation, the more difficult the digestion by the gastric juice. He insists that there are no grounds for denying eggs in liver diseases, but with a tendency to gallstones, it is wiser not to allow more than one egg a day, so as not to increase the cholesterolemia. Well cooked eggs can be allowed with albuminuria, but persons with interstitial nephritis and hypercholesterolemia had better refrain from eggs.

46. **Vaccination of Pacific Islanders Against Typhoid.**—Summarized in Paris Letter, page 1320.

48. **Film Treatment After Mastoid Operation.**—Daure refers to radical petromastoid clearing out of diseased tissue, the aftercare of which has always been a tedious and risky business. The film treatment simplifies it very much and reduces the risks. The cavity is half filled with the paraffin mixture at 70 C.; a cord is introduced in the midst of the paraffin. It is left undisturbed for five or six days, and then the solid block of paraffin is lifted out by the cord and a fresh paraffin dressing applied, after the cavity has been dried with cotton or hot air. When the conditions were such as to forbid the film treatment, he applies the Carrel irrigation technic until the field is ready for the film dressing.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 1, 1918, **42**, No. 4

49 *Graphic Sign of Abdominal Aortitis. A. Mougeot.—p. 109.
50 *Bradysphygmia. F. Ramond and A. Petit.—p. 111.
51 *Urogenital Complications of Typhoid. G. Faroy.—p. 114.
52 *Test for Quinin in Urine. J. Baur and Reveillet.—p. 119.
53 Purulent Pleurisy from Typhoid Bacilli. Tavernier, Serr and Brette.—p. 123.
54 Hospital Apparatus for Subcutaneous Injections of Quinin. J. Baur.—p. 127.

49. **Pathognomonic Sign of Abdominal Aortitis.**—Mougeot has noticed that the femoral pulse beat at the root of the thigh was felt from a fortieth to a twentieth of a second before the radial pulse beat in cases of abdominal aortitis. With aneurysm of the lower aorta, the femoral pulse lags behind the radial pulse, but with abdominal aortitis the femoral pulse is advanced before the radial pulse. As this finding was constant in the fifty cases of abdominal aortitis tested for this sign, he thinks that it may be regarded as pathognomonic. In all other forms of disease of the aorta, sparing the abdominal portion, the radial and femoral pulse beats are synchronous.

50. **False Bradycardia.**—The pulsus bigeminus with extrasystoles was only 44 but the heart beat was 88, when the young man was reclining. When sitting up or standing, the radial pulse and the heart beat were both 80 and regular. In the reclining position the oculocardiac reflex did not modify either, but, seated or standing, both were retarded by eight or ten beats. Epinephrin and atropin accelerated both heart and pulse beat. A nervous origin for the bradysphygmia thus seemed beyond question. But the sympathetic system and not the pneumogastric seemed to be the one involved.

51. **Typhoid Genital Lesions.**—Faroy reports three cases of typhoid and paratyphoid orchitis and epididymitis, with urethritis in two of the cases. The onset was sudden, intense pain in one testicle, occurring in convalescence or as defervescence impended. The genital complications subsided completely in eight or ten days without entailing suppuration or atrophy. The urethritis was revealed merely by a purulent drop squeezed out of the passage. There was no history of and nothing to suggest gonorrhea in any of the cases. The urethritis preceded and was probably responsible for the orchitis.

52. **Test for Quinin in Urine.**—An aqueous solution of picric acid added to fluids containing traces of salts of alkaloids, especially quinin, forms a very fine, light precipitate of picrates, causing opalescence or turbidity in the fluid or sedimentation. A set of ten test tubes are prepared with normal urine plus progressive amounts of quinin, from 0.01 to 0.10 gm. per liter. To each tube is added 5 c.c. of 1 per cent. solution of picric acid or Esbach reagent. This gives a set of standards with which the turbidity of the urine to be tested is compared. All must be well shaken up at the time, and five minutes contact be allowed. The urine must be free from albumin and other alkaloids, etc. Uric acid crystallizes on the walls of the tube, without causing turbidity.

Journal de Médecine de Bordeaux

March, 1918, **89**, No. 3

55 Soldiers' Cemeteries. L. Bosredon.—p. 55.
56 *Acute Nonsuppurating Encephalitis. Creyx.—p. 62.
57 *Pneumococcus Meningitis. H. Mallié.—p. 67.

56. **Nonsuppurative Encephalitis.**—Creyx remarks that what we call meningeal symptoms in reality are not meningeal, as the meninges in themselves are not capable of inducing such symptoms. They manifest their lesions by the reaction in the parts which they inclose. In an acute case described, a young woman had had fever and diarrhea for two weeks and then coma developed, with slight trismus and slight contracture of the arms and exaggeration of the tendon reflexes. The legs were relaxed, the tendon reflexes abolished. There was no Kernig sign nor trace of hyperesthesia or convulsions. Lumbar puncture released limpid fluid under considerable pressure. There was nothing to suggest poisoning, and the temperature kept very high. The woman died the third day after the onset of the coma, and necropsy revealed merely acute encephalitis without suppuration, as the only lesion accompanying the septicemia. The bacteriologic findings were negative, but the examination was not very thorough. The irregularity in the distribution of the lesions entails remarkable variety in the symptoms, very different from the systematic phenomena noted with chronic disease of the nerve centers. The acute encephalitis may subside without leaving a trace, but it usually leaves some definite sclerosis at certain points or in certain fibers, and these acquire a definite character. Acute nonsuppurative encephalitis has been observed in connection with malaria, syphilis, rabies, poliomyelitis and tuberculosis, as well as with streptococcus, staphylococcus and pneumococcus infection. Suppuration is the rule with mixed infection According to the localization of the inflammation, the symptoms are delirium, convulsions and coma, with a diffuse process, but with focal lesions they are localized. The age makes a difference: in the fetus, Little's disease results; in children, cerebral paralysis or symptoms from the sequels of the inflammatory process, possibly typical insular sclerosis.

57. **Pneumococcus Meningitis.**—Mallié found one case of meningitis accompanying pneumonia in 244 cases of frank pneumonia in a camp of German prisoners. In another case there was pneumococcus meningitis without pneumonia, confirmed by necropsy. Weill reported in 1915 a similar case in

a child. He regards the pneumonia as merely a habitual episode in pneumococcus septicemia; it is not a local disease like tonsillitis or phlegmon.

Journal de Radiologie et d'Electrologie, Paris

November-December, 1917, **2**, No. 12

58 Electricity in Treatment of Neuralgia. L. Delherm and M. Chassard.—p. 689.
59 Roentgen Examination of Fracture of the Fore Arm. F. Masmonteil.—p. 704.
60 Bone Anomalies; Two Cases. J. Pierquin.—p. 710.

Presse Médicale, Paris

April 4, 1918, **26**, No. 19

61 *Phrenopericarditis. F. Trémolières and L. Caussade.—p. 169.
62 Warping of the Ulna after Fracture. F. Masmonteil.—p. 170.

April 8, 1918, **26**, No. 20

63 *Study of Uremia. F. Legueu and H. Chabanier.—p. 177.
64 *Cancer of Rectum. M. Desmarest.—p. 180.
65 Epinephrin and Pituitary Treatment of Asthma. R. Bensaude and L. Hallion.—p. 185.
66 Present Status of Diverticulitis. M. Romme.—p. 186.

April 11, 1918, **26**, No. 21

67 *Gastroptosis. V. Pauchet.—p. 189.
68 *Neuro-Arthritism with Thyroid Instability. L. Lévi.—p. 191.
69 *The Fourth Interallied Surgical Conference.—p. 193.

61. **Adhesions Between Pericardium and Diaphragm.**—The functional disturbance is a set of symptoms suggesting angina pectoris. The physical symptom is the disappearance of the apex beat. The roentgen symptom is a shadow at the left side where the heart and diaphragm are soldered together. This triad characterizes adhesive phrenopericarditis. Trémolières and Caussade have encountered twenty cases of this kind. Although the angina pectoris symptoms may be distressing at times, yet they never had serious consequences in their experience.

63. **Urea Content of the Blood and Ambard's Constant.**—Legueu and Chabanier discuss the significance, the clinical application and the import for the prognosis of azotemia and the ureosecretory constant according to Ambard's formula. They have simplified this formula to the coefficient found by dividing the urea content of the blood by the square root of the urea content of the urine brought up to twenty-five per thousand. This coefficient in normal conditions is 0.070. Experience has confirmed, they reiterate, that this coefficient is an absolute and quantitative index of the secreting power of the kidneys. It insures a precision previously unattainable. A dog was submitted to the various tests of kidney functioning with methylene blue, etc. Later the dog was returned to the same investigators for repetition of the tests, without informing them that one kidney had been removed. This was not discovered until the Ambard formula was applied, but this revealed the exact proportion of renal parenchyma that was missing.

Death occurs in nephritis usually during an acute exacerbation of the azotemia. An acute exacerbation may be occasioned by any infectious or toxic state or may follow any operation anywhere on the body. Death from acute azotemia is often mistakenly ascribed to congestion or embolism of the lung or other cause. The organism is producing urea in excess while the kidneys are excreting less than usual. The oliguria may not be extreme, but still the azotemia may reach a fatal height, and here again the Ambard formula reveals the true state of affairs. It is particularly useful when applied to the urine from each kidney separately when it is a question of nephrectomy.

64. **Cancer of the Rectum.**—Desmarest gives an illustrated description of the method for removing a cancer in the lower half of the rectum without loss of the sphincter of the anus. He works through two incisions, one transverse, across the perineum, and one longitudinal, over the coccyx. He has applied this method in twenty-one cases, and the interval of three years since the first case enables him to speak confidently of the superior advantages of this technic. There has been recurrence in only two of his first series of seventeen cases, and in only one of these soon after the operation. Comparison of the outcome, with the natural anus functioning, shows the superiority of the method, he says, over others which require an artificial anus.

67. **Gastroptosis.**—Pauchet emphasizes that gastroptosis must not be considered a purely local lesion, such as can be cured by an operation. There is always a complex pathologic condition, insufficiency of the glands in the abdomen (liver, suprarenals, etc.); degeneration of tissues, and unstable nervous system. Persons with gastroptosis may have to be treated for months and years to correct each of the disturbances depending on these various causes, with liver and suprarenal organotherapy, physical culture, outdoor exercise, psychic reeducation, massage and general hygiene. It requires a kind of abdominal orthopedics with the cooperation of the surgeon, the physician, the masseur and the physical culture trainer. He describes the operation he has found most effectual to bring the stomach and transverse colon into their proper place. He sutures the transverse colon to the lower margin of the stomach, and then draws up the stomach into the proper shape and size with half a dozen parallel threads quilted superficially the length of the anterior stomach wall, stopping short of the pylorus region and greater curvature. The threads are brought out through the skin and the field is painted with iodin to induce adhesion.

A bandage often gives great relief but it has to be fitted at first under the roentgen rays, and be put on while still reclining in bed each morning. In Pauchet's experience with thirty operative cases, in six the operation alone failed to give permanent relief from all the disturbances. They yielded only when orthopedic principles were applied. Then the patients gain in weight and the general condition improves while the pulse in the erect position is no longer abnormally fast (80 instead of 120 in Leven's case). Gastroptosis is often mistaken for salpingitis if the colon is sensitive, or for wandering kidney if the cecum is distended and painful; for gastric ulcer if there is pain at once after eating, and for chronic appendicitis if there are pains in the iliac fossa. The splashing sound may suggest simple dilatation of the stomach, and if all these can be excluded then a purely functional nervous trouble is sometimes assumed. Operations have often been done on these mistaken diagnoses. Sometimes they merely augment the patient's discomfort and sufferings. Differentiation is based on the history of the case and roentgen examination standing and reclining. The bismuth shows the site and degree of the reducible or permanent kinks in the digestive tract.

68. **Instability of the Thyroid with Neuro-Arthritism.**—Lévi describes the case of a woman of 31 who has presented neuropathic symptoms for many years as well as migraine, recurring lumbago, abdominal ptosis, nasal asthma and varicose veins. Attacks of local congestion in various organs also occurred at times in the lungs or joints or elsewhere, and she had an anaphylactic crisis after injection of horse serum. There were also symptoms of exophthalmic goiter at times while at others the symptoms suggested thyroid deficiency. The thyroid gland varied in size at different times, and Lévi ascribes the whole train of symptoms to this instability of the thyroid gland. This assumption was confirmed by the regulating effect of thyroid treatment. The attacks of hyperthyroidism develop on a basis of chronic hypothyroidism, and hence thyroid treatment, bringing this basic level up to normal, causes the subsidence of the angioneurotic disturbances. This does not surprise those who have witnessed the subsidence under thyroid treatment of urticaria, Quincke's edema and intermittent hydrarthrosis. This case, as also the benefit from thyroid treatment of this woman's sister with somewhat similar symptoms, confirms the necessity for studying the thyroid functioning when these *poussées fluxionnaires* are noted in any organ.

69. **Conclusions Adopted by the Interallied Surgical Conference.**—This fourth conference was held at Paris in March, and the conclusions adopted on the seven subjects appointed for discussion may be partially summarized as follows:

Transfusion of Blood: This is indicated in the first few hours after the wound in case of grave hemorrhage, but in collapse from gas gangrene it has not seemed to benefit, and in shock the indications for transfusion have not been deter-

mined as yet. Later posthemorrhagic anemia does not call for transfusion if the general condition is satisfactory. Donors should be tested for agglutinins and classified ready for use, except in emergency cases; fatal accidents have occurred from agglutination of the blood corpuscles by the donor's plasma, but the danger of this is relatively small and may be disregarded at an advanced post, but strict asepsis is indispensable. Transfusion should not be attempted until the bleeding has stopped. It is important to know the quantity of blood transfused. Tests of blood kept for several days have been satisfactory. This method will render great service at the advanced posts during intense military activity. Good results have been obtained with citrated blood, blood drawn into a paraffin ampule, and blood drawn into a syringe.

Trench Foot: Wet cold, long standing or crouching, and secondary infection are responsible for this pathologic condition. It affects soldiers from hot countries more than Europeans, and youth, hyperidrosis and a preceding attack are predisposing factors. The Belgians ascribe the rarity of trench foot in their army to the fact that they have discarded strapped leggings. With preventive treatment, trench foot becomes very rare: facilities for keeping the feet dry and warm, frequent change of units in wet regions, and daily greasing and massaging the feet; changing the shoes, with surveillance not to allow constriction from the puttee straps. Treatment should include a tepid bath and soaping of the foot with a boric acid and camphor soap every two or three days, wrapping it up daily in a large moist boric acid and camphor dressing. Phlyctenas should be opened and if there are eschars they should be merely scarified not to make them bleed but to let the medication act on the subjacent tissues. The eschars should be left to drop off of themselves. No operation should be done unless the surgeon's hand is forced by the general condition except finally to regulate vicious stumps. But preventive tetanus antitoxin should be given every week until healing is complete.

Wounds of the Pelvis: Comminuted fractures of the crest of the ilium require extensive trephining. An intraperitoneal wound of the bladder or rectum requires a laparotomy and suture, and with a suprapubic, extraperitoneal bladder wound, a primary suture of the bladder is in order. With a wound of the side or the base of the bladder the drainage is sufficient and, later, a retention catheter aids in the healing of the urine fistula. Primary emergency cystostomy is required only when there are retention and progressive infiltration around the bladder, or severe hematuria or a foreign body in the bladder. Secondary infection calls for cystostomy with drainage. With an extraperitoneal wound of the rectum, open up the wound, tampon the hole in the bladder, and keep the man constipated. When both bladder and rectum are injured, a retention catheter, ventral decubitus, and micturition in knee-chest position, favor the spontaneous healing of the bladder-rectum fistula, after clearing out the extravesical track of the projectile.

Pseudarthroses: The inevitable cause of pseudarthrosis after a war fracture is the primary destruction of part of the diaphysis. With working men we should aim to secure direct ankylosis between the femur and tibia, with or without an interposed graft. For men following a sedentary occupation, a pseudarthrosis permitting flexion has greater advantages. Either of them is better than an artificial leg. No operation should be done for pseudarthrosis until the skin wound is completely healed and the inflammation subsided. A number of further points for management of pseudarthrosis of elbow, etc., are given in minute detail. A combination of a metal plate screwed to the bone and a bone-periosteum graft has given very fine results in simple pseudarthrosis or when there is loss of substance in a limb with a single bone.

Wounds of the Foot: The integrity of the sole is extremely desirable, and reunion by primary intention particularly important here, even if certain bones have to be sacrificed to permit this. All operations on the anterior tarsus seem to give favorable results if there is no complication from the cicatrix or from the condition of the articulations. Vicious attitudes of the feet can be ameliorated by severing or transplanting tendons if the articulations are free. Partial resection of the calcaneum gives less unfavorable results if the foot is kept at a right angle throughout the treatment. On the whole, operations on the posterior tarsus often cause graver functional disturbance than disarticulation or a Syme amputation. Depage stated that in case of suppuration of the articulations of the tarsus, persisting in spite of astragalectomy, the suppuration can be conquered by severing tendons and ligaments enough to turn the foot forward or inward (*renversement du pied en avant ou en dedans*), keeping it with a bandage in this position, thus favoring disinfection of the focus. The foot can be restored to normal position in one or two weeks.

Osteosynthesis for Fractures: Primary osteosynthesis is a difficult operation which exposes to grave complications. It should be reserved for specialist skill. Apparatus give such good results now that it is rarely called for outside of pseudarthrosis cases. Temporary osteosynthesis with plate and screws is preferred.

Correspondens-Blatt für Schweizer Aerste, Basel

March 16, 1918, **48**, No. 11

70 Short Race as Test for Heart. J. Karcher.—p. 337.
71 Mobilization Psychoses in Swiss Army. F. Uhlmann.—p. 345.

Policlinico, Rome

March 24, 1918, **25**, No. 12

72 Economy in Dressing Materials. G. F. Novaro.—p. 269.
73 Detection of Picric Acid Jaundice. A. Scala.—p. 271.
74 Aneurysm of Femoral Vein Simulating Inguinal Hernia. C. Marchesi.—p. 277.

Rivista Critica di Clinica Medica, Florence

March 23, 1918, **19**, No. 12

75 *Pernicious Anemia plus Lymphadenosis. B. Frattini.—p. 133.
76 Rhythmic Spasms of Face Muscles. L. Siciliano.—p. 137.

75. **Pernicious Anemia Plus Lymphadenosis.**—The previously healthy soldier developed progressive pernicious anemia which kept up for months and then passed into lymphatic leukemia which soon proved fatal, with lymphadenosis. It had evidently been a case of leukemia from the start, the pernicious anemia findings being its earliest manifestation. Until the necropsy revealed the typical findings of lymphatic leukemia, the lymphadenosis seemed to have been merely superposed on a progressive pernicious anemia.

Prensa Medica, Buenos Aires

Feb. 10, 1918, **4**, No. 25

77 Classification and Treatment of Inguinal Hernias. E. Corbellini.—p. 339.
78 *Nonoperative Reduction of Aneurysm. T. Castellano.—p. 347.
79 Fibroma in Maxillary Sinus with Calcareous Degeneration. E. Galiano and J. Layera.—p. 349.
80 Normal Beef Serum in Treatment of Anthrax. J. Penna and others.—p. 350. Continuation.

78. **Medical Cure of Aneurysm.**—Castellano's patient was a man of 50 who for a year had been having pain in the middle portion of the right supraclavicular region. Then he noticed a tumor, which rapidly increased in size and proved to be an enormous aneurysm of the trunk of the brachiocephalic artery. The man was kept absolutely quiet in bed, on a milk-vegetable diet, without much liquid, and he was given once a week a subcutaneous injection in the flank of 60 or 40 c.c. of a 2 per cent. solution of gelatinized serum. As the Wassermann reaction was positive, mercurial treatment was given at the same time. Improvement was rapid and pronounced. The only reaction to the injections was local pain, slight rise in temperature and transient leukocytosis. The aneurysm subsided to a clinical cure. The absolute repose in the horizontal position seemed to be an important element in the treatment. Twenty injections were made in this case.

Revista de Medicina y Cirugia Practicas, Madrid

Feb. 14, 1918, **42**, No. 1494

81 Effect of Electricity on Lacteal Secretion. J. S. de Figueroa.—p. 161.

Feb. 21, 1918, **42**, No. 1495

82 *Pathology of Skin and Internal Pathology. D. E. de Oyarzabal.—p. 193.

82. **Relations Between the Pathology of the Skin and Internal Pathology.**—De Oyarzabal discusses here the connection between liver disease and the color of the skin. His clinical observation has confirmed the existence of jaundice in certain cases when the liver seemed to be normal. The jaundice was evidently due to destruction of blood corpuscles and release of their pigment, but he thinks there is much evidence that it requires passage through the liver before it can induce jaundice. The amount of bile formed in the liver increases with the supply of the substances out of which the liver produces the bile. The pressure in the bile is normally less than the blood pressure, but if circumstances conspire to increase the bile pressure above that of the blood, then the bile passes into the blood. These data sustain the contention of Naunyn and others that there is no directly hematogenous jaundice; it is always the result of reabsorption. When the liver becomes atrophied and the circulation through it impeded, ascites develops unless the collateral circulation is sufficiently developed. A network of varicose veins over the region is a favorable sign, as this testifies to ample collateral circulation. We should aim to induce it and increase it; this is accomplished by tapping the ascites. This relieves the veins from the compression by the ascitic fluid, and the veins then dilate and assume the task of the collateral circulation. In regard to xanthoma and xanthelasma, he says that the connection between them and jaundice is not very clear or close. The frequency of jaundice and the rarity of the others, and the existence of xanthoma with apparently normal liver, seem to testify against such connection. On the other hand, cholesterol crystals have been found in xanthomas.

Semana Medica, Buenos Aires

Jan. 31, 1918, **25**, No. 5

83 *Prophylaxis of Plague. J. B. Valdes.—p. 121.
84 *Crystals in Blood and Date of Death. B. Valverde.—p. 124.
85 Hygiene of the Eyes. P. B. Ferro.—p. 130.
86 Campaign against Social Plagues in Argentina. E. R. Coni.—p. 135.
87 Mutations of Tubercle Bacilli. M. R. Castroman.—p. 140.

83. **Prophylaxis of Plague.**—Valdes is chief of the public health service at Rosario, and gives the regulations enforced there. A squadron is entrusted with the business of free deratization and disinfection of premises where plague is found, and no building can be erected or remodeled without an isolating cement floor, at least 5 c.c. thick, in the basement. These measures are enforced for warehouses and shops as well as dwellings. Some rats examined for plague were found with echinococcus cysts or streptothrix tumors.

84. **Crystals in the Blood as Determining Date of Death.**—Valverde reproduces thirteen microphotographs showing the varying aspect as time passes of certain characteristic crystals found in blood after death. These crystals are fragile and colorless; and their size is proportional to the interval since death, up to thirty-five days, and then they disappear. They are dissolved by acids but are not modified by bases or alcohol, and do not dissolve in water. They turn black under a 5 per cent. solution of silver nitrate, and blue under potassium ferrocyanid. These crystals are always found in putrefying blood, and sometimes even in aseptic blood. They appear the third or fourth day or even earlier in summer, the fifth or sixth day in winter. Their disappearance by the thirty-fifth day aids in determining the date of death. The crystals were found the fourth day in blood drawn from a living person, but a dried spot from a drop of his blood did not show the crystals till the fifteenth day. They have straight sides but coffin-like ends, and increase in size from less than one twelfth to over half the diameter of the microscopic field.

Siglo Medico, Madrid

Feb. 9, 1918, **65**, No. 3348

88 Needed Reforms in Medical Course. V. Prieto.—p. 102.
89 Morphology and Movements in Vitro of Blood Corpuscles. F. Mas y Magro.—p. 103. Continuation.
90 Treatment of Acute Psoriasis. Sicilia.—p. 106.

Feb. 16, 1918, **65**, No. 3349

91 *Syphilis Acquired after Conception. D. E. M. Villapadierna.—p. 122.
92 *Stones in the Ureters. A. P. Martin.—p. 124.

91. **Postconception Syphilis.**—Villapadierna says that if the child shows no signs of syphilis while the mother gives a positive Wassermann reaction, the question whether the child should be given to the mother to nurse should be decided only after serious consideration of the case. Several cases are described which show that the probability is that the new-born child is infected, even though it may show no signs of syphilis, even at necropsy.

92. **Concretions in the Ureter.**—Martin reports three cases, in a girl of 9, a boy of 11, and an adult. The diagnosis was made with the roentgen rays or cystoscope, and as the stones were small, they were dislodged and expelled by promoting the diuresis. He insists that morphin not only relieves the pain from an impacted stone but aids directly in its expulsion, as it relaxes the spasmodic contraction which is increasing the pain, and the increased pain induces greater contraction. Morphin breaks up this vicious circle, and as the spasm relaxes the stone drops down.

Vida Nueva, Havana

April, 1918, **10**, No. 4

93 *Duodenal Alimentation in Treatment of Gastric Ulcer. F. Pages and J. A. H. Ibañez.—p. 132.
94 *Oxygen in Disease of the Stomach. R. G. San Martin and P. A. Barillas.—p. 137.
95 Necessity for Propaganda for Cremation. C. Hoyos.—p. 140.
96 Prophylaxis of Venereal Disease. J. E. L. Silvero.—p. 142; R. B. Agramonte.—p. 143.

93. **Duodenal Alimentation in Treatment of Gastric Ulcer.**—Pages and Ibañez relate that this method has proved extremely successful in their hands. They describe here four typical cases in detail out of their total seventy-two cases in two years. They introduce the tube into the duodenum at night and feed with 150 gm. of tepid milk daily, then 200 gm., but never up to 300 gm., as this amount cannot be borne with comfort. Yolks of eggs are given, up to four a day. A saline injection is given after each feeding. The relief of pain is the first effect noted. The success was complete in all but two cases, one complicated with stenosis of the pylorus and one with actual and severe Reichmann's disease. With inoperable gastric cancer, some of the patients were relieved of pain and the general health improved under the duodenal feeding, but in others it not only failed to relieve but brought on gastric hemorrhage, sometimes fatal.

94. **Oxygen Treatment of Stomach Disease.**—By means of a stomach tube and generator, the stomach walls are treated with oxygen, and in the forty-eight cases reported the pain, hypersecretion and pylorospasm all subsided. The beneficial effects are most plainly evident in cases of long standing stomach disease, rebellious to the ordinary measures. In four of their cases the stomach symptoms had returned after a gastro-enterostomy, but were banished anew by the oxygen treatment.

Russkiy Vrach, Petrograd

Dec. 2 to 30, 1917, **16**, No. 48-52

97 *Surgical Shock. N. A. Kruglevsky.—p. 577.
98 *Diaphragmatic Hernia from War Wound. I. E. Hagen-Torn.—583. Commenced in No. 43, p. 554.
99 Differentiation of Chronic Aortitis. K. M. Rutkevitch.—p. 587.
100 Buried Goiter. M. A. Tchalusoff.—p. 589.
101 Action of Alkaline Metal Salts on the Vessels of Internal and Peripheral Organs. M. I. Gramenitzky.—591. Commenced in No. 33, p. 493.
102 Embryology in the Medical Schools. K. M. Yakhontoff.—p. 597.
103 Preparation of Giemsa Stain. A. I. Savatieff.—p. 598.
104 *The Ferments in Infectious Diseases. A. S. Solovtsova.—p. 601. Commenced in No. 43, p. 569.
105 Tropical Ulcer in Russian Soldiers. B. A. Bolter.—p. 605. Commenced in No. 33, p. 504.
106 War Wounds of the Eyes. R. A. Kats.—p. 606. Conclusion.

97. **Surgical Shock.**—Kruglevsky reviews what has been published on this subject by Crile, Seelig and Lyon, McNee and others, and endorses the general view that surgical shock is a complex process. The various phases of it include the increased ventilation of the lungs—hyperpnea, entailed by irritation of the respiratory center—and the reduced tension of carbon dioxid in the arterial blood—acapnia. The acapnia entails arrest of the respiration—apnea, which lasts until

normal CO_2 tension is restored. In case of very great losses by way of the increased ventilation of the lungs, the reserves of oxygen may be exhausted, and this entails death of vital organs. The insufficiency of O_2 entailed by apnea in each case induces a certain asphyxia of the tissues, accompanied by formation of nonvolatile acids—acidosis. The acidosis of the blood and tissues deranges the venopressor mechanism, in consequence of which filtration, diffusion and osmosis, exceeding the limits of physiologic functioning, draw out from the blood the greater part of its plasma, thus inducing acute oligemia and stagnation of the blood corpuscles in the small arteries. Thus death in all the aspects of surgical shock occurs with the manifestations characteristic of shock from hemorrhage.

The best means to ward off shock is by inhalation of O; for this he prefers Volhardt's technic. Injection directly into the blood of physiologic salt solution is useless in shock because this solution is unable to restore the osmotic tension in the blood and tissues, and hence does not diminish the stasis. Injection into the blood of a hypertonic solution of cooking salt reduces the extravasation of the plasma, but it has to be done in time. He adds that excision of the group of muscles involved is the best means for warding off shock from gas gangrene.

98. **Diaphragmatic Hernia from War Wound.**—Hagen-Torn concludes from his own experience and analysis of the literature that the possibility of rupture of the diaphragm and development of a hernia through it should always be borne in mind with a firearm wound in this region. It must not be forgotten that the clinical picture of diaphragmatic hernia refers to extreme cases, with protrusion of the stomach into the pleural cavity. In the majority of cases, however, with firearm wounds there is not enough of an opening for this; only the omentum and with it a loop of small intestine, slide into the chest cavity. The signs and symptoms from this form of hernia are less distinct, and they can be detected only by repeated careful examination of the patient. The roentgen rays are of great assistance in the differential diagnosis in certain conditions. A laparotomy besides the thoracotomy is required in some cases. He reiterates in conclusion that in perfecting the measures for differentiation of and for operating on diaphragmatic hernia, we must not forget that operative measures should be applied at once, without waiting for the appearance of signs of strangulation of stomach or bowel. He gives some roentgenograms taken with the patient lying prone and in others reclining on his back; the changes in the shadow with change of position are instructive. Grosser in 1899 had compiled 433 cases of diaphragmatic hernia, but most of them were found only at necropsy. Among those diagnosed during life, in nearly all the stomach was included in the hernia. No case is on record like the one Hagen-Torn reports in detail in which merely the omentum and a loop of small intestine formed the contents of the hernia, diagnosed before the operation. The patients do not complain of severe symptoms, the traction on the omentum, etc., being comparatively slight. The strangulation of the loop of small intestine may occur at a point where the bowel is comparatively less sensitive. These factors were combined in his case, so that he long hesitated before operating. Only his tenacious desire to get at the explanation of the cause of the vague pains experienced by the patient led to repeated examination and final correct interpretation of the findings, and successful operation.

104. **The Ferments in Infectious Diseases.**—Solovtzova here concludes her extensive study of the ferments in various infectious diseases, and especially their connection with the crisis. A number of diagrams and tables are given for comparison of the findings in respect to proteose, amino-acids, lipase and the protein split products, according to Sørensen, in the urine in relapsing fever. They show that as the temperature falls at the crisis, in relapsing fever, the proportion of proteolytic ferments is increased as a rule. The amount of the split products is reduced. The artificial crisis induced by intravenous introduction of drugs forms the exception to the rule, as with this the split products accumulate in the blood. The amount of amino-acids in the urine gradually increases, beginning with the attack and through to the falling temperature of the crisis; at the time of the crisis itself it jumps suddenly still higher. With the artificial crisis, this sudden upward jump is delayed and does not occur till the day after the crisis. Negative findings, or the absence of proteose, is observed only with a very severe crisis or unfavorable termination of the disease. Leukocytosis is observed at the crisis, but she found no morphologic changes in the blood. The findings with lipase are conflicting; generally it increases toward the crisis. Antitrypsin shows a reduction with the natural crisis and a rise with the artificial. The fall of the temperature at the crisis, she declares, is dependent on the massive appearance of the split products in the blood. With relapsing fever the drop in temperature at the crisis is dependent on the massive destruction of the spirochetes and—in all probability—on the disintegration of their bodies by the ferments of the organism. The ferments (toxins) generated by the spirochetes of relapsing fever evidently have little affinity for the cells of the organism. The most important cause of the favorable or unfavorable course and issue of infectious disease in human beings is the condition of and the relations between the ferments of the organism and the degree of affinity between them and the infecting agent.

She has previously published a similar study of the ferments in typhoid fever, and on the influence on the temperature of parenteral injection of albumin. She compares here her results with those of Vaughan, Joblin, Petersen and others, as published in THE JOURNAL and the *Journal of Experimental Medicine.*

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

March 9, 1918, **1**, No. 10

107 *Epidemic Meningitis. G. Kapsenberg.—p. 669.
108 *Albuminuria in Schoolchildren. J. M. Hamelberg.—p. 679.
109 Present Status of Asthma. S. Brandes.—p. 686.

107. **Contagiousness of Meningitis.**—Kapsenberg remarks that the meningococci are not restricted to the meninges but invade the nasopharynx which is open to the outer world, and thus every person with the disease is likely to spread the infection even after recovery. In the first week of the disease the cocci are found in the nasopharynx in from 54 to 78 per cent. of cases. But as the sick stay in the house and as there may not be susceptible persons in their immediate environment, other cases seldom develop directly from them. But the persons in the environment harbor the cocci, and as these healthy carriers go in and out they are liable to encounter some susceptible persons among the large numbers they meet, and the disease develops in these susceptible contacts. He cites various data along these lines, especially reports by Ostermann in 1906, among others, showing 70 per cent. of carriers found in the contacts; Bruns, 36.7 per cent. in 609 examined; and 10 per cent. in Kapsenberg's own experience last year among forty-one examined. It is possible that repeated reciprocal infection of each other by the sound carriers may induce conditions in one or more of them so that they finally acquire susceptibility, and thus develop the disease after having been merely a healthy carrier for some time. He emphasizes the necessity for seeking out all the carriers in the environment. When possible, they should be isolated. As a rule, their carriership is transient. But in any event they should be warned of their danger for others, and instructed how to reduce this danger to the minimum by controlling their sneezing, coughing, the use of the handkerchief, and other opportunities for droplet infection of others. But the vital thing is to detect the persons who are permanent carriers. They are the main source for the perpetuation of the disease, and if they can be discovered and rendered harmless, a great stride will have been made toward conquering the disease.

108. **Albuminuria in Schoolchildren.**—Hamelberg found albuminuria in nine of sixteen boys after a class in gymnastics while there was no albumin to be found in their urine on a day when there was no gymnastic class. This led to examination of the urine of 401 boys and 311 girls in the school. The examinations were made before and after the gymnastics

class and, when albuminuria was found, the child was ordered to bring morning urine for examination. The children were all of the upper grades in the school. Albuminuria before the gymnastics was evident in 8 per cent. of the boys and 24 per cent. of the girls; after gymnastics, in 14 per cent. of the boys and 33 per cent. of the girls. In both categories the percentages grew higher the older the children; among the girls of the sixth grade and higher grades the proportion was 49 per cent. This albuminuria of adolescents is generally extrarenal, and Hamelberg applied the postural test to all the children with albuminuria to decide to what extent lordosis was a factor. He had the children stand ten minutes in the military attention position, or kneel for ten minutes with the trunk held straight, or lie prone on the ground and lift themselves up by their hands on a bench placed close to them. This last exercise induces extreme lordosis and showed albuminuria in fourteen of thirty-four children who had given negative findings with the two other tests.

He remarks parenthetically that it took skilful suggestion sometimes to get the children to void urine repeatedly at such short intervals, but he accomplished it. The trunk of the child was always bare during these exercises; this enabled oversight not only of the lordosis but of the general nourishment, etc. The findings as a rule confirmed Jehle's statements that the lordosis which induces albuminuria is exclusively that in the upper portion of the lumbar spine, but Hamelberg does not agree with him that lordosis in this region is the sole explanation of albuminuria in children. Chemical tests show a difference in the albumin found in different cases. Fatigue is evidently a factor in some cases. To exclude fatigue, he had some gymnastic exercises done with the arms alone as the children lay on the floor. He draws no practical conclusions from this research except that the children who present this extrarenal albuminuria are the very ones who most need gymnastics and other measures to strengthen them. Fully 90 per cent. were frail children among those with lordotic albuminuria, and 70 per cent. of those with albuminuria in general; only 10 per cent. of the total were lively healthy children.

Hospitalstidende, Copenhagen

March 13, 1918, **61**, No. 11

110 *Fracture of Calcaneum. T. Eiken.—p. 321.
111 *Tests for Sugar Content of Blood. W. Leschly.—p. 326.
112 Present Status of Five-Day Fever. O. Thomsen.—p. 332.

110. **Isolated Fracture of Anterior Process of the Calcaneum.**—Eiken's patient was a young woman who twisted her foot in dancing; as she remembered, it was in supination. The foot was treated with bed rest and massage, but did not improve. She applied for treatment to five or six different physicians, and each treated her for the assumed sprain, or tendon or nervous trouble. She was up and about and even took part in dancing, but there was always pain in the foot, gradually increasing. Finally roentgenoscopy revealed the cause of the disturbances in an isolated fracture of the anterior process of the calcaneum at the point where there had been tenderness. There had been no swelling, according to her testimony, at any time. The foot could be moved freely except that rotating movements increased the pain, which then spread upward along the Achilles tendon. The fracture seemed to involve both the anterior articulation and the calcaneocuboid. A plaster cast was applied, with the foot at a right angle, for twenty days, with elevation for six. Roentgenoscopy showed considerable callus in three weeks. Crutches were then allowed and in four days the patient was walking with a cane, and there was only slight pain in walking and no tenderness except along the flexion tendon. This rapidly subsided and the girl was soon playing tennis and dancing. This is Eiken's fourth case of this fracture, but is the only one in which the fracture must have occurred from traction by the ligament. The fact that there was no dislocation of the fragment explains the comparatively slight disturbances. The case emphasizes the importance of early roentgen examination in all cases of severe sprains, even when no sign of fracture can be detected otherwise, especially when the injury occurred along the longitudinal axis. The continued use of the foot in this case kept the fracture from consolidating, and serious disturbance might have resulted as after two months of this there were no signs of healing. Hence the prompt healing under rest in a cast for twenty days was particularly striking.

111. **Comparative Determination of Sugar Content of Blood.**—Leschly applied to forty persons parallel tests with the Myers and Bailey technic and Bang's uranyl method for determination of the sugar in the blood. The results are tabulated with other metabolic findings. Only slight differences were found with the two technics. As the American method gives the sugar content in 100 c.c. of blood and Bang's in 100 gm. of blood, this is equivalent to the latter giving constantly 5 per cent. higher values than the former. As the solutions used in the Myers-Bailey keep well, this seems to be, he says, the preferable method when the test is to be made only occasionally. He adds that Bang's uranyl method is an improvement over his original technic, as this removes the iodin-binding substances. Leschly's research confirms that from 0.100 to 0.105 is the normal sugar range in the blood.

Hygiea, Stockholm

March 30, 1918, **80**, No. 6

113 *Nasal Reflex Neuroses. A. Hofvendahl.—p. 321.
114 Glioma in Optic Nerve of Child. E. Rietz.—p. 344.
115 Cystosarcoma of the Mamma. H. Westermark.—p. 352.

113. **Nasal Reflex Neuroses.**—Hofvendahl says that experimental research has apparently shown that drugs and gland extracts which increase the tonus in the sympathetic nervous system modify the blood picture in the direction of neutrophils aneosinophilia, while those that increase the tonus in the cranial and sacral autonomic nerves (which may be designated as the parasympathetic system, It includes more than the vagus), modify the blood picture in the direction of mononuclears eosinophilia. The parasympathetic nerves in whatever organ they are found respond always alike with paralysis to atropin and with stimulation under pilocarpin. The sympathetic system, on the other hand, is not influenced by these but responds promptly to epinephrin and cholin. Hormones from the ductless glands and bacterial toxins are liable to induce similar contradictory effects on the sympathetic and the parasympathetic systems. Bronchial asthma is usually preceded by a copious watery discharge from the nose (overstimulation of the parasympathetic system) and swelling of the interior of the nose (irritation of the vasodilators which belong to this system), while the transient improvement under atropin testifies that this parasympathetic system is temporarily paralyzed by this drug. In three of eleven typical cases of nasal asthma, tuberculous toxins were evidently responsible for the irritation of the parasympathetic system and eosinophilia. This nasal neurosis sometimes long precedes other appreciable manifestations of tuberculosis. Hofvendahl found vasomotor disturbances in the nose in 10 per cent. of 500 tuberculous persons in the first and second stages of the disease. Thorough examination of the whole body is indispensable in cases of nasal neuroses. The sympathetic parasympathetic balance in such persons is easily upset, and this may occur from emotional stress, bacterial toxins, mechanical pressure, odors, pollen dust, etc. There is liable also to be an unstable balance in the endocrine system in such persons, especially the balance between the thyroid and genital glands, with a special tendency to disturbances during transitional periods. The slightest anomalies in the interior of the nose should be corrected in persons with this exaggerated reflex irritability of the nasal mucosa. In several of the cases reported, after removal of a polyp, the tendency to attacks of asthma progressively declined. In one case the nasal asthma first developed under a course of digitalis treatment and it subsided under atropin. Toxic action from the digitalis seems to have been responsible for the nasal reflex neurosis in this case. In one woman of 27 with bronchial asthma and symptoms of hyperthyroidism, they became much exaggerated with the onset of the menses. She sweated profusely during the attacks of asthma. There has been no return of the asthma since resection of a spine and crest which were much enlarged.